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36 Public Sports Turf Dilemma

Our exclusive survey shows the sports turf market is on the verge of exploding into a mega-buck, high interest segment of the Green Industry. The question remains of who will shepherd this "coming of age" of sports turf?

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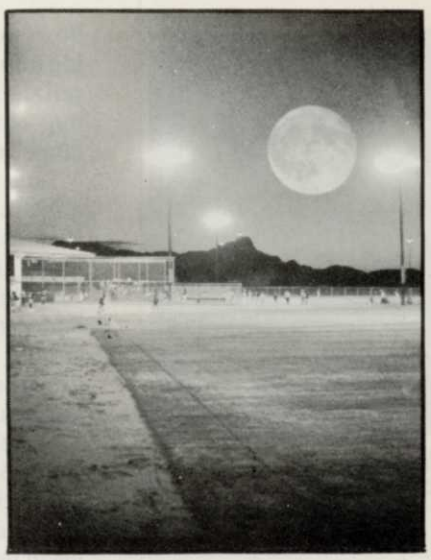

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The profit approach concept to softball is new with Tucson's Sports Park leading the way.

WEEDS TREES & TURF (ISSN 0043-1753) is published monthly by Harcourt Brace Jovanovich Publications. Corporate and Editorial offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Advertising Offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130, 111 East Wacker Drive, Chicago, Illinois 60601 and 3091 Maple Drive, Atlanta, Georgia 30305. Accounting, Advertising Production and Circulation offices: 1 East First Street, Duluth, Minnesota 55802. Subscription rates: $20 per year in the United States; $25 per year in Canada. All other countries: $50 per year. Single copies (pre-paid only): $2 in the U.S.; elsewhere $4.50; add $3.00 for shipping and handling per order. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices. Copyright © 1985 by Harcourt Brace Jovanovich, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

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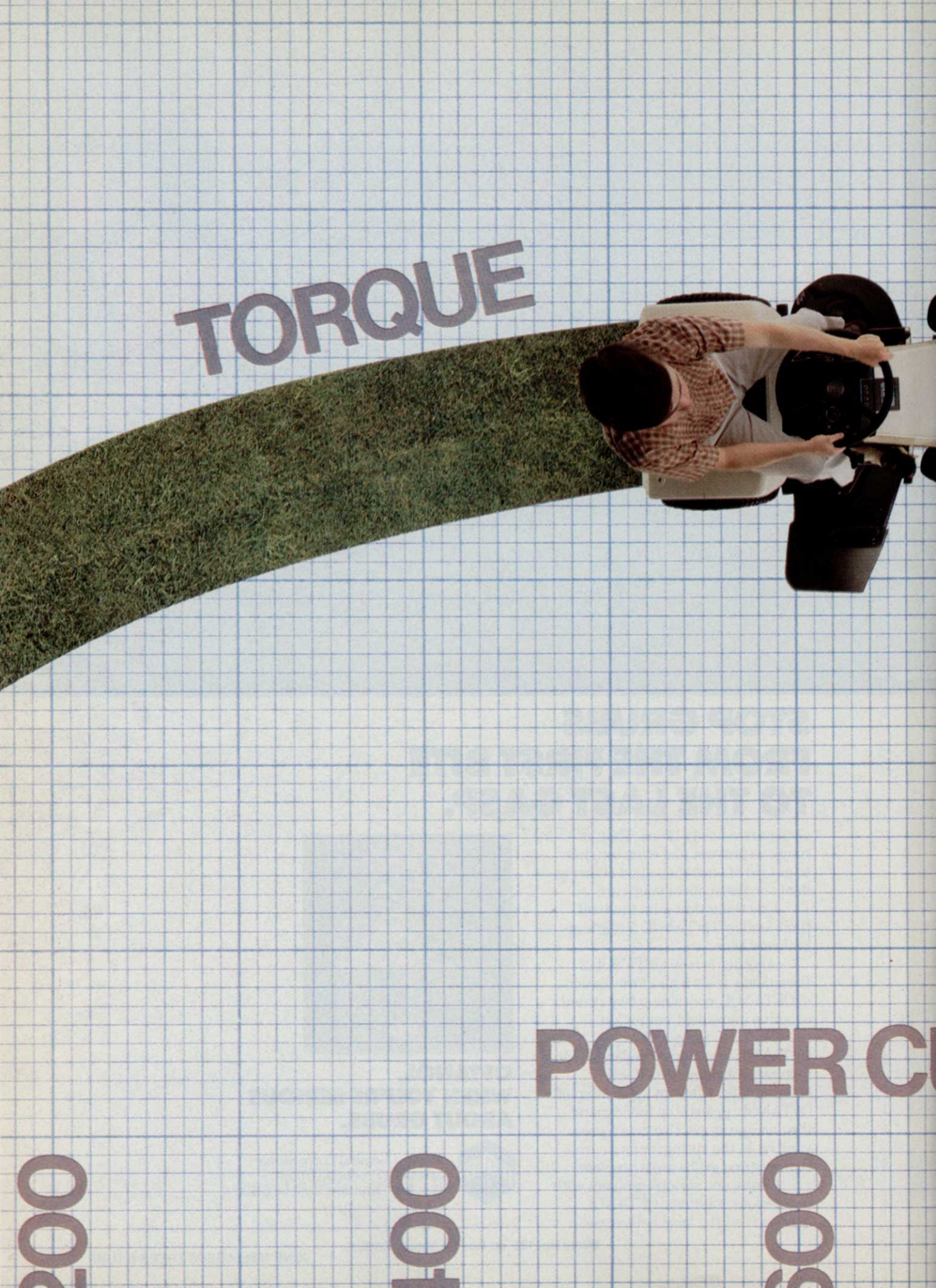
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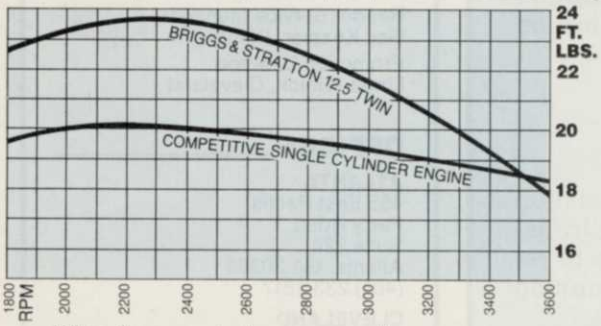

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by **Bruce F. Shank**, executive editor

Chemical lawn care exceeds mechanical for first time

Lawn Care Industry magazine has revealed gross revenues for chemical lawn care exceeded those for mowing/maintenance for the first time in the seven-year history of the magazine's State of the Industry Report.

The survey questionnaire, mailed to 1,500 lawn care companies, places 1984 chemical lawn care gross revenue at $1.5 billion, compared to $1.3 billion for mowing maintenance. Chemical lawn care grew at an amazing 40 percent pace while mowing/maintenance grew at only 11 percent, which isn't bad compared to most other service industries. Combined, the overall lawn care industry grew 26.6 percent in 1984.

The survey also revealed a large increase in tree care equipment purchases by lawn care companies as they expand into tree and shrub care. Increases in spray tank and irrigation supplies purchases indicates trends toward liquid application and irrigation installation.

Open shops grow in California

William Burke, executive director of the San Diego Association of General Contractors, told the California Landscape & Irrigation Council recently 'open shops' are causing unions to rethink demands. Open shops employ both union and nonunion tradesmen.

Burke's group is now developing medical and other benefit programs for open shops. Such programs further weaken union strongholds in California. Unions, after winning major wage and benefit increases in 1983, have had to accept concessions in following years. LA landscape contractors refused to grant union demands last year causing a strike.

Burke warned the group of Los Angeles area landscape contractors that open shops that pay excessively low wages will only strengthen unions.

Garden centers join discounters

Garden centers are fighting falling consumer pesticide sales by aligning themselves with discount chains. A recent survey by Charles Kline & Co. showed discount stores have captured the largest share of the $1.4 billion consumer pesticide and fertilizer market, 31 percent compared to 23 percent for garden centers and 21 percent for supermarkets and grocery stores.

In certain markets, lawn and garden centers have entered into agreements with discounters such as Gold Circle to recapture shares of the market. Garden center chains, like Petitti Brothers in northern Ohio, connect their yards to discount stores. Consumers shopping at the discount store are attracted by the plant material displays. Consumers benefit from trained sales people and better quality plant material without having to make an extra trip to a remote nursery.

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SURVEY

Women's landscaping role grows...slowly

Melissa Merritt's confidence in her groundskeeping abilities is solid. She's doubtful however, employers look at her in the same light.

When Dana Smithlin talks shop at a conference trade show she usually finds herself in the company of men. As a partner in Foothill Grounds, Tucson, AZ, she just doesn't find many other female business owners in the Green Industry.

Their story, if not typical, reflects some of the trends, often contradictory, uncovered by a recent survey by *Lawn Care Industry* magazine. A total of 2,000 questionnaires were mailed to lawn care and landscape companies.

Women are finding career opportunities in the landscape and lawn care industries the poll suggests, but the Green Industry is still male dominated. The acceptance of women workers (or more accurately the level of their involvement) has been steady. Steadily slow.

Of the 277 companies responding to the *LCI* survey, 168 (61 percent) "feel" landscape companies are hiring more women. But of the 139 companies that added additional employees the last five years, only 64 (about 26 percent) added women to their payrolls. And only 20 percent of the women in the landscape and lawn care industries work "in the field" as opposed to the office.

"I didn't have any problems getting on a landscape crew in Texas," Merritt tells *WT&T*. But when she returned to her hometown to get a job on a stadium grounds crew, she was turned down flat. "I think they were afraid I couldn't do the heavy work." Instead, she applied for and beat out 62 other applicants for the top grounds job at Penn Valley Community College in Kansas City, MO.

Says Smithlin, "it was hard, really hard. Obviously, I have the support of my husband Peter and my brother Ed (the other equal partners in Foothill Grounds), but for the longest time I guess I was kind of like a silent partner."

Smithlin says clients often tried to bypass her involvement in the company. "They'd say, 'Nope, let me speak to Peter,' That first couple of years I'd get very angry when this happened."

But with more than 40 employees, Smithlin let it be known she takes an active role in the company's affairs. "Someone has to make the decisions," she says. "Many of the men in this industry don't know how to run their businesses. There are a lot of successful companies—probably more than you realize—that have a woman running the books."

Smithlin, who started in the business with a shovel in her hand, says the impact of females in the industry will grow fastest as managers, landscape architects, or through the nursery ranks; not as laborers or crew supervisors.

The *LCI* poll suggests many employers shy away from hiring women field workers because of the heavy labor of moving railroad ties or swinging a 16 lb. sledge; a point Merritt isn't ready to concede.

"I can operate trucks and tractors," Merritt responds. "Lots of times I've

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Participants at the Sports Turf Summit *include: (center to right), Dr. Fred Grau, Musser International Turfgrass Foundation; John Macik, sports medicine coordinator for the National Football League Players Association; Dr. William Daniel, professor emeritus, Purdue University; Dr. Kent Kurtz, executive secretary, Sports Turf Managers' Association; Allan Shulder, executive director, Professional Grounds Management Society; Tim Bowyer, president Southern Turf Nurseries; Michael Latino, eastern sales manager, Ransomes Equipment Co.; Eliot Roberts, director, The Lawn Institute; and Jack Murray, research agronomist, USDA*

TURFGRASS

Sports turf leaders set research committee

The decision to create a Sports Turf Research and Information Committee was unanimous after two days of information sharing by 14 sports turf figures from across the country.

"A great amount of good information on sports turf field management exists," Eliot Roberts of the Musser Foundation told the group. "We need to get it in the right hands." The Musser Foundation is a non-profit turf research foundation.

Dr. Henry Indyk, professor of soils and crops, Rutgers University, New Brunswick, NY, urged the group to stress the liability of poor sports fields to schools and parks. "No one seems to take poor fields seriously until some child gets injured," Indyk stated.

"A good sports field has a positive impact on a football, soccer, or baseball team," Tim Bowyer, president of Southern Turf Nurseries, Tifton, GA, said. "We install more than 100 new fields each year and team records improve in nearly every case. We know this, but reaching the right people to

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ASSOCIATIONS

PGMS, ALCA plan joint trade show

Two national associations are pooling their efforts for a trade show in Milwaukee late in 1986.

The Professional Grounds Management Society and the Landscape Management Division of the Associated Landscape Contractors of America will be holding a joint show in conjunction with their annual meetings Nov. 9-13 in the Milwaukee Convention Center. The show is planned for Nov. 11-12. A field day with demonstrations of equipment is set for Nov. 13.

RESEARCH

Growth regulator studied at Temple

A potential new low-cost growth regulator is being studied on tomato plants at Temple University by Dr. George Manaker, chairman of the university's department of horticulture.

"In the case of ornamental plants, we might see shorter production time, more flowers per plant, and earlier flowering," Manaker says of the new compound which came to the attention of researchers about five years ago.

Although interest in the compound reportedly waned because of the expense of its production, scientists discovered that it is also found naturally in plants. For his research at Temple's Ambler Campus, Manaker is using an experimental compound which can be extracted from natural plant sources at much less cost than producing the pure chemical.

Manaker declines to name the compound to protect possible patent rights.

"We are now compiling data to see what the effects have been on growth and other plant development," the Temple researcher says.

INDUSTRY

Praise the Lord, pass the shovel

Landscapers in sunny Southern California chalked up some points on that big board in the sky recently.

Members of the Long Beach/Orange County Chapter of the California Landscape Contractors Association (CLCA) donated time and material to help a church prepare its sanctuary for Easter.

"They came in here and did the whole thing from the turf to the trees," Dan Moore, pastor of the Living Waters Christian Fellowship in Fountain Valley, tells WEEDS TREES & TURF. "They did an incredible job. For four or five days they had 15 or 20 fellows working on our property. They seemed to be having a ball."

Moore reports the cooperative landscaping effort transformed the two-acre church grounds into a garden. He terms the effort of the landscapers and their suppliers as "a humanitarian gesture."

For their part, the CLCA members felt the project was a pretty fair image builder. Or as Gary Walters, president of the local CLCA chapter, says: "We want the community to know that the members of the CLCA are not out to make a quick buck."

Mike Cucchiara of Hydro-Scape Products arranged for the donated materials and time, while Wayne DuBoise of Mission Landscape in Mission Viejo coordinated the actual construction.

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UPDATE

Herbicide defense workshop held

More than 60 people in forestry, lawn care, and agriculture met in Atlanta this spring to learn about defending pesticides on the state and local level. The workshop was sponsored by the National Coalition for a Reasonable 2,4-D Policy and featured Edith Efron, author of the book *The Apocalyptics* on cancer research in the U.S. Efron contends that public opinion about cancer has been shaped through the media by false information about man-made versus naturally occuring carcinogens.

Harold Olinger, assistant chief of administration for the Virginia Division of Forestry, outlined the types of public hearings and told the workshop attendees how to use them to their advantage. "The public hearing can serve many purposes and we need to learn to use it to our advantage," Olinger advised.

Mary Ann Ford, public affairs manager for Union Carbide, told the group public relations programs are necessary to encourage a better two-way understanding.

Labor lawyer Richard Lehr told the group employees must be aware of customer concerns since liability begins with employees.

Ray Russell, public affairs manager for the Dow Chemical Co., Agricultural Products Dept., said pesticide disputes are more common today on the state and local level. Specific products are being challenged rather than pesticides in general said Russell.

Agency, legislature disagree

Members of the Texas House Agriculture Committee believe that state's Department of Agriculture overstepped its bounds when it issued regulations recently requiring farmers to prenotify neighbors and delay farmworker entry to treated fields. The Department's regulations were harolded by the Environmental Protection Agency as bold measures to protect neighbors and farmworkers from pesticides. The state's pesticide lobby didn't think it was within the Department's authority to set such restrictions.

Minnesota faces fertilizer limits

Local ordinances in Minnesota intended to limit the amount of phosphate reaching lakes may include limitations on fertilizers applied to turf to 0.5 lbs. phosphorus per 1,000 sq. ft. per year. The Minnesota Agricultural Fertilizer Dealers Association is researching legislation in other states regarding fertilizer applications. Both current consumer and professional fertilizers would exceed this amount of phosphorus. Lawn care companies and golf courses would have to limit phosphorus applications to once per year if the ordinances take effect. Persons with experience in similar fertilizer legislation are urged to contact Craig Sallstrom, 1821 University Ave., Room 253, St. Paul, MN 55104.

"I've been in the CLCA for some time now and this isn't the first time we've joined together in a community project," Walters adds.

The California Landscape
Contractors Association donated time and material this spring in helping the Living Waters Christian Fellowship in Fountain Valley get its sanctuary ready for Easter. Shown here (l to r): Pastor Dan Moore, Mike Cucchiara, Wayne DuBoise, Dave Patterson, Bob Cavanaugh, and Gary Walters.

INDUSTRY

Herbicide Team gets grass registration

Team, a herbicide from Elanco, has received registration for control of crabgrass, goosegrass, and other weed grasses in cool-season turf. It should be available in limited quantities in 1985.

Golf course superintendents will be evaluating claims it provides long-lasting and improved control of late-germinating annual grasses.

ASSOCIATIONS

Georgia golf groups sharing quarters

Headquarters of four separate golf-related organizations in Georgia are going to be located under the same roof. Each association, however, will retain its autonomy.

"This is in no way a merger between any of the associations," says Wendell Couch, president of the Georgia State Golf Association (GSGA).

Joining the GSGA and the Southeastern Region of the U.S. Golf Association in their office in Marietta, GA, are staff members from the Georgia Golf Course Superintendent's Association (GGCSA) and the Georgia Section of the Professional Golfers' Association of America.

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A spokesperson at the 2,000-sq-ft office tells *WT&T* the associations are sharing the "Golf House south offices to better serve the interests of golf in Georgia."

AWARDS

Wisconsin architect honored for project

Judson E. Griggs transformed a section of an industrial park into a scenic setting for videotape commercials. He received the Environmental Improvement Grand Award from the Associated Landscape Contractors of America (ALCA) for his efforts.

"It's rewarding to be recognized professionally by your peers," says Griggs, a landscape architect with Lied's in Sussex, WI.

"More importantly, I'm happy that we were able to meet the needs of our client." The client in this case was Marx, Inc., a motion picture studio in Glendale, WI.

Keys to beautifying the industrial park and making it suitable for the filming of outdoor television commercials were the use of mature plants and improvements to the area's drainage, including the addition of a small pond. Griggs' design encompassed electrical work, bridge construction, lighting design, and pedestrian and vehicular circulation.

Explains Griggs, "with careful placement of mature plants, naturally sculpted earth beams and the construction of several outdoor structures, the industrial park atmosphere was eliminated."

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COMMITTEE *from page 8*

tell it to has been extremely difficult," Bowyer pointed out.

Dr. William Daniel, professor emeritus, agronomy, from Purdue University, West Lafayette, IN, told the group the primary insurer of sports fields in the U.S. increases premiums by 50 percent if a team plays more than half its games on artificial turf. John Macik, sports medicine coordinator for the National Football League, said professional football players favor natural turf over artificial for career longevity and severe injury reasons.

After revealing the large volume of existing support information for sports field construction and maintenance, the group decided to create a Sports Turf Research and Information Committee, under the Musser Foundation umbrella. Dr. Fred V. Grau will serve as information coordinator to help parks, schools, and other sports sponsors improve their fields. Data on the size of the sports field market is also being gathered for the benefit of manufacturers and suppliers interested in the push for better sports turf.

For more information, contact Dr. Fred V. Grau, P.O. Box AA, College Park, MD 20740. (301) 864-0090.

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IN-THE-MIDDLE

by **Bruce F. Shank**, executive editor

Lebanon stands behind golf distributors

In the April issue of *WT&T*, we reported on Lebanon Chemical Corp.'s creation of a new division to sell to lawn care companies. The reason for the new sales emphasis was prompted by the price sensitivity and highly competitive nature of the lawn care market.

In the same article, we mentioned Randy Rogers, who is in charge of program development for the Country Club and Greenskeeper lines sold by Lebanon. Some golf superintendents took this to mean they could buy direct from Lebanon and the company's distributors were quite upset.

This is not the case. The Lebanon distributor provides an important service and inventory function to the golf superintendent. If superintendents started buying direct from the manufacturer, an important service to the golf industry would be harmed.

Chemical distributors extend too much credit to customers

A recent study of pesticide formulators and distributors by Velsicol Chemical Co. credit manager Karen Miller has raised some concern about current credit policies in the industry.

Miller told the members of the United Pesticide Formulators and Distributors Association during a recent meeting in Phoenix their margins are too thin and, in some cases, their debt too high. "I see small distributors disappearing because they are undercapitalized," Miller said.

Miller showed the group what accounting ratios should be and what a survey of the UPF&DA revealed they really are. Gross margins, which should be 40-50%, are actually 18-24%. Current assets to current debt ratio, which should be 3 to 1, is actually 1.7 to 1 for distributors under $10 million gross and 1.3 to 1 for those over $10 million. Net profit, which should be 10-15% of tangible net worth, in this survey is actually an 8% loss for distributors under $10 million and 9% return for those over $10 million.

Miller said that in some cases manufacturers have been overselling distributors, putting the distributors in the highly-leveraged positions they are in today. She also strongly urged distributors to institute tougher collection policies saying collection periods are stretching to 75 days from the 30 days they should be.

Lofts also supplies Host chain

In the April column we reported that Adikes stood to benefit from its relationship with Flowertime, recently purchased by General Host. Host is reportedly planning to establish a national chain of garden centers.

Jon Loft, chairman and president of Lofts Seed Inc., pointed out Adikes is not the only company supplying seed to Host. His company has also been supplying seed to Flowertime and Frank's Nursery, another Host garden center chain, for 17 years.

PEOPLE

Names in the news

James Taylor, head of Taylor Tree Surgery, Walden, NY, takes the reins as president of the New York State Pesticide Users Council (NYSPUC). He was elected during the first annual meeting of the NYSPUC in Albany. About 65 industry people attended.

Others elected at the meeting of the year-old group include: Vice President **Dr. James Dewey**, Secretary **Robert J. Mungari**, and Treasurer **Frederick Boyd**.

The National Landscape Association (NLA) recently tabbed **Robert-Siebenthaler**, Dayton, OH, as president. **Denny R. Church**, Lombard, IL, is the new vice president; **William K. Doerler**, Lawrenceville, NY, secretary-treasurer.

This spring also saw **George Koziarz** returning to the post of president of the Illinois Landscape Contractors Association—his second term. He will be aided by Executive Vice President **John Hendricksen**, Vice President **Ken Gallt**, Treasurer **Jim Bussey**, Secretary **Bill Davids**, and Sargeant-at-Arms **Pete Grathoff**.

Gary D. Myers, president of The Fertilizer Institute, announces the appointment of **Pamela W. Lucas** as assistant vice president. Lucas joined the Institute in November 1982.

Longtime landscape industry spokesman **Karl Korstad** was surprised with an honorary membership for life in the Associated Landscape Contractors of America (ALCA) this past winter. Korstad, ALCA publication chairman, and his wife, Frances, have been in the landscape business for 35 years.

Paul E. Niewoehner is the national

Paul Niewoehner

Bob Hefta

sales manager for Union Carbide Specialty Products, a newly formed marketing group of Union Carbide Agricultural Products Company, Inc. Niewoehner is a 15-year veteran of the Carbide sales force. Replacing Niewoehner as regional sales rep in the Midwest is **Bob Hefta**. Also affected by the realignment is **Tony Gambino**, who will serve Union Car-

continued on page 66

Penneagle's still pushing out Poa at Oakmont C.C.

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Paul Latshaw
Supt. Oakmont Country Club

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LANDSCAPE LOG

by the Editorial Advisory Board, *Weeds Trees & Turf* magazine

July presents turf disease challenge

Southwest and Southeast landscape managers should be on the look out for turf disease symptoms beginning in July. Kent Kurtz at Cal Poly Pomona suggests aerification, light verticutting, and fertilization of bermudagrasses in July. Diseases may crop up late in the month with summer rains.

Bruce Augustin of the University of Florida says brown patch on St. Augustine and leafspots on bermudagrass develop in Florida in July. Webworms, cutworms, and chinchbugs are also in high gear during the month. Augustin recommends curative rather than preventative insecticide treatments due to problems with resistance.

In the Great Plains, conditions are drier says Robert Shearman of the University of Nebraska. Irrigation should be utilized to avoid drought stress and fertilizer should be withheld from cool-season grasses. Summer patch, brown patch, and pythium are potential threats in July.

Armyworms, bluegrass billbug larvae, white grubs, and greenbug aphids are active at this time. Spider mites may be damaging ornamentals. Elm leaf beetles, peach tree borers, and pine needle scale are also active.

Roses should be sprayed at regular intervals for blackspot control. Junipers should be sprayed with copper fungicides for cercospora twig blight.

Midwest and Northeast landscape managers are also on guard for signs of drought stress says Martin Petrovic of Cornell. Trees and shrubs can be mulched to keep root zones moist and cool.

July is the right time to trim or shear evergreens says Petrovic. Watch for mite infestations.

Harry Niemczyk of the Ohio Agricultural Research and Development Center, urges golf course superintendents to check for damage by *Ataenius spretulus*. Cutworms, grubs, chinchbugs, billbug larvae, greenbug aphid, and sod webworm are also insect concerns in July.

Mid-Atlantic landscape managers should aerify, verticut, irrigate, and fertilize warm season grasses says VPI & SU's Jack Hall. Postemergence weed control and treatment for dollar spot are appropriate in July. Warm season turf repair is recommended.

Hall says cool-season turf may need to be limed and treated for emerged weeds. Sod webworms, chinchbugs, and billbugs can be problems. Brown patch, dollar spot, Fusarium, and pythium diseases may attack in July. **WT&T**

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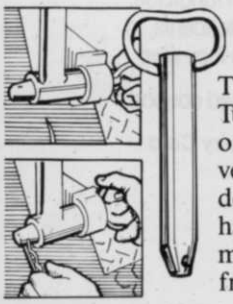

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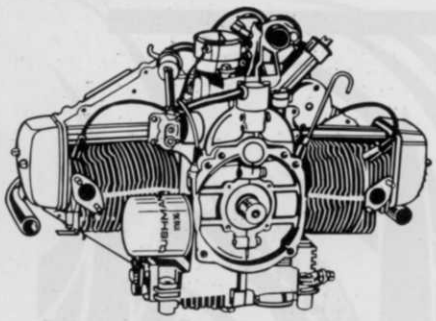

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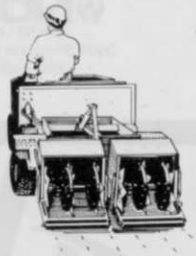

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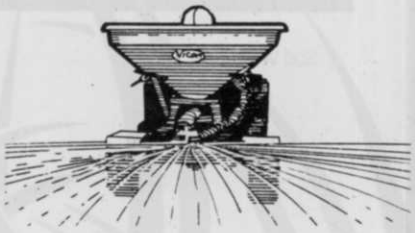

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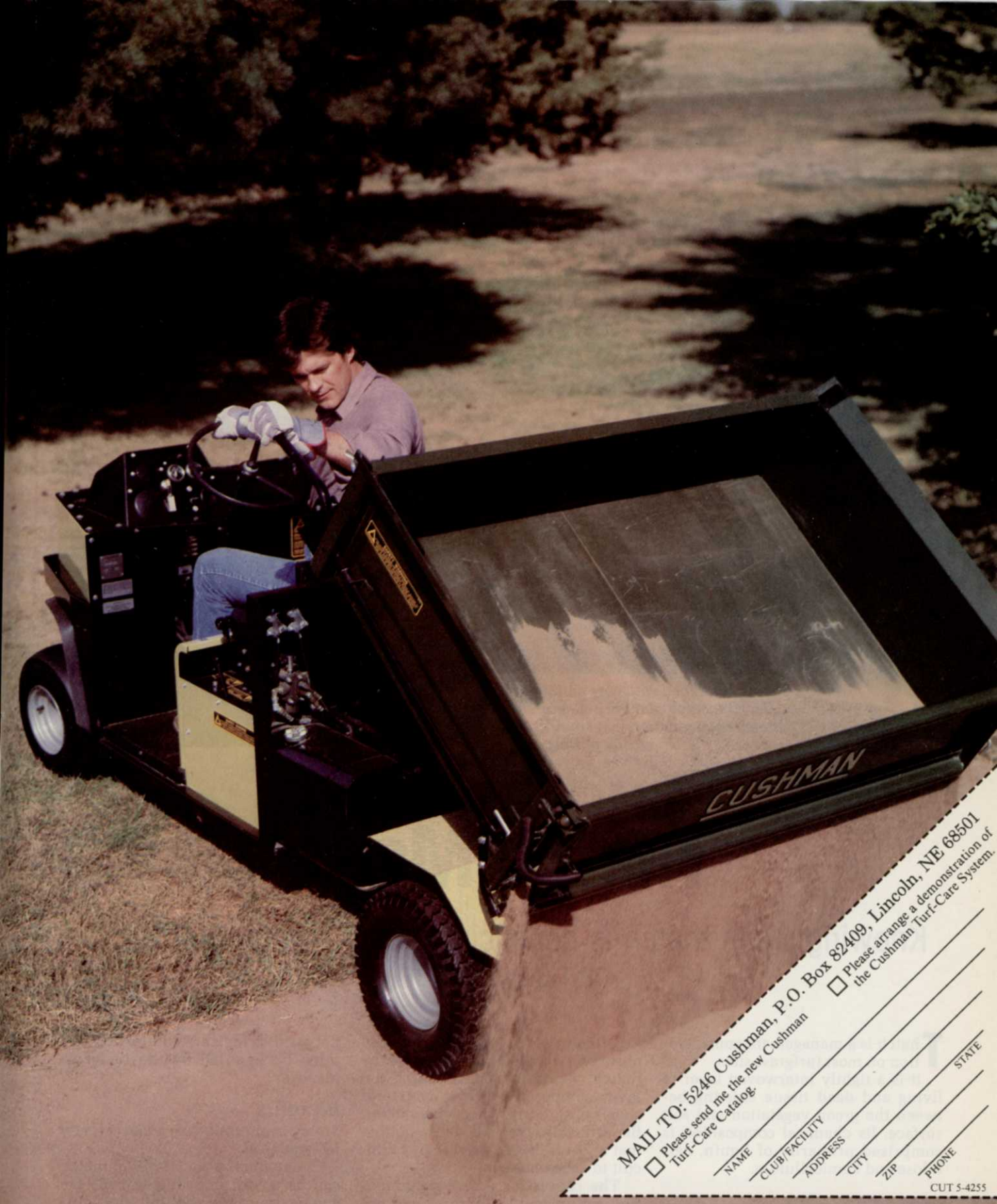

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Thatch is a layer *of living and dead tissue located between the green vegetation and the soil surface.*

Power raking *combined with core cultivation was the preferred method of reducing excessive thatch accumulation in a study at the University of Nebraska.*

Thatch Management

Knowing when thatch is beneficial and when it's troublesome can save otherwise doomed turf areas.

Thatch is a management consideration on most turfgrass sites.

It is a tightly interwoven layer of living and dead tissue existing between the green vegetation and soil surface. Its chemical composition is comprised primarily of lignin, cellulose and hemicellulose.

(This story was authored by Dr. Bruce Augustin, University of Florida; Dr. J.R. Hall III, Virginia Polytechnic Institute and State University; Dr. A. Martin Petrovic, Cornell University; and Dr. Robert Shearman, University of Nebraska. All are members of the WT&T Editorial Advisory Board.)

Often in older turf areas, one can observe two distinct layers in the thatch. There is a loose thatch top layer composed of growing lateral shoots and recently decaying matter. Beneath this layer is a dense bottom mat of peat-like material that is difficult to decompose.

The causes for thatch accumulation are numerous and all are not clearly understood.

However, it is reasonable to assume that thatch accumulates when organic matter production increases; it is difficult for the microbes involved in decomposition to keep pace. The net result is thatch accumulation that must be handled by the turfgrass manager.

Benefits

Small amounts of thatch can actually be beneficial.

A one-quarter inch layer of thatch can be useful in reducing moisture evaporation from the soil, insulating the crowns of grass tissue from extremes of cold and hot temperature, reducing annual weed seed germination, protecting the crown tissue from traffic damage and otherwise improving the turf.

Researchers generally agree that thatch should not be allowed to accumulate to levels in excess of 0.5 to 0.75 inch on lawns, sports or general turf sites. This level should be a quarter inch or less on golf greens. Accumulations greater than these generally result in thatch disadvantages outweighing any potential advantages (See Table 1).

Accumulation rates

Turfgrass species and cultivars differ in their thatch accumulation rates.

Research at the University of Nebraska has demonstrated that vigorous, actively-growing Kentucky bluegrasses with high lignin content are more prone to thatching than less vigorous ones (See Table 2).

Small amounts of thatch can actually be beneficial.

This relationship is very important, since in most cases vigorous well-adapted turfgrass species and cultivars are preferred.

Thus, these vigorous, well-adapted species and cultivars will require more careful management to minimize the rate of thatch build-up.

Thatching tendency increases with mowing height. Kentucky bluegrass turfs mowed at two inches had twice the thatch accumulation of those mowed at one inch after four years of maintenance.

In a similar study, thatch accumulation at three inch mowing height was 67 percent greater than that at two inches. This relationship coincides with the fact that higher mowing heights produce vegetation with greater lignin, cellulose and hemicellulose contents, which are the primary chemical constituents of thatch.

Nitrogen fertilization has often been associated with increased thatch. However, research at Nebraska with Kentucky bluegrasses and creeping bentgrasses showed no difference in thatching tendency for nitrogen rates ranging from 0 to nine pounds N/1000 sq. ft.

Under these study conditions the organic matter decomposition was sufficient to keep pace with the organic matter production and thatch did not accumulate.

A Kentucky Bluegrass turf with 1.5 inch thatch accumulation was studied at the University of Nebraska turfgrass research facility. Power raking in combination with core cultivation practiced in the spring and fall was the most effective means of reducing the accumulated thatch when compared to power raking or core cultivation alone.

Core cultivation reduced thatch and increased bulk density when compared to the untreated thatchy turf.

In a golf green study core cultivation in combination with vertical mowing and light, frequent topdressing was most effective in minimizing thatch build-up.

Auburn University has examined thatch buildup on bermudagrass, looking specifically at nitrogen source, core aerification, vertical mowing and sand topdressing.

TABLE 1

Advantages and Disadvantages of Thatch in a Turfgrass Community

ADVANTAGES *(When present in moderate amounts):*

- Insulates the soil surface beneath the thatch layer
- Reduces soil compaction
- Increases the resiliency or cushioning effect of the turf
- Increases turfgrass wear tolerance*

DISADVANTAGES *(When present in excessive amounts):*

- Increases turfgrass environmental stress
- Reduces turfgrass to heat, cold, and drought
- Increases disease incidence
- Increases insect activity
- Increases puffiness, scalping, foot- printing, and spiking
- Increases proneness to localized dry spots
- Increases susceptibility to iron chlorosis
- Reduces activity of certain pesticides
- Increases phytotoxicity of certain pesticides

*Research at the University of Nebraska indicates that wear tolerance increases with thatch accumulation until a critical point is reached, when wear tolerance decreases.

From: Thatch Symposium, Weeds/Trees/Turf, April 1979.

TABLE 2

Thatch Accumulation for Kentucky Bluegrass, Tall Fescue, and Creeping Bentgrass Cultivars*

Kentucky Bluegrasses	Tall Fescues	Creeping Bentgrasses
Touchdown *(High)*	Adventure *(High)*	Penncross *(High)*
Glade	Clemfine	Penneagle
Baron	Falcon	Toronto
Victa	Olympic *(Medium)*	Prominent *(Medium)*
Sydsport	Rebel	Emerald
Adelphi *(Medium)*	Jaguar	Cohansey
Bensun	Mustang	Congressional
Parade	Kentucky 31 *(Low)*	Seaside *(Low)*
Aquila		
Park		
Rugby *(Low)*		

* Based on relative levels (i.e. high, medium, and low of thatching).

Researchers there noted that after three seasons of observation, 12 pounds N/1000 sq. ft./year of activated sewage sludge fertilizer produced significantly more thatch (17 percent) than 12 pounds N/1000 sq. ft./year from ammonium nitrate.

In this study, where aeration cores were collected, no significant decrease in thatch buildup was brought about by increasing the frequency of core aerification from two times per year to five times per year.

Vertical mowing lightly 12 times per year produced no less thatch than two light vertical mowings.

Topdressing once per year produced 37 percent more thatch than a four topdressing per year program that applied 2.5 times as much topdressing.

The experiment was conducted under golf green maintenance conditions and mowed at 1/4 inch mowing height[1].

University of Illinois research on Kentucky bluegrass thatch buildup as it is affected by mulching mowers and nitrogen level suggests slightly higher thatch buildup resulted from higher nitrogen levels, with six pounds N/1000 sq. ft./year.

Turf quality comparisons indicated that on most rates turf quality was superior when clippings were returned. This effect was less noticeable at the six pound rate than at the lower rates.

Greater thatch buildup was noted in plots mowed once every two weeks than in those mowed more frequently.

Over the three growing seasons, the plots mowed once per week with a mulching mower produced 26 percent less thatch build up than the plots mowed once per week with a conventional rotary mower returning clippings. Removing clippings in this study did not significantly reduce thatch buildup[2].

Other work at the University of Illinois has illustrated thatchy Kentucky bluegrass turf will degrade diazinon more rapidly than turfs with no thatch, given equal irrigation management. Three weeks after diazinon application to turf with a one-inch thatch layer receiving daily irrigation, only seven percent of the applied diazinon remained. The same turf irrigated every four days retained 33 percent diazinon after three weeks[3].

Turf without thatch, irrigated every four days, retained 47 percent of the applied diazinon after three weeks.

In the Northeast

There are six major problems associated with thatch on cool season turfgrass found in the Northeast.

First, when an excessive thatch layer exists (greater than one inch), the turfgrass stand is less tolerant of stress conditions. This is primarily due to the greater temperature extremes found in thatch as compared to soil, and to the fact that most of the turfgrass root system is contained in this zone of greater temperature fluctuation (higher and lower temperatures than soil).

Second, thatchy turf uses water less efficiently than non-thatchy turf. Again, this is due to a concentration of the root system in a more porous, less water-holding medium than soil. Thatchy sites can have poor water penetrability (hydrophobic) once the thatch has become dried, allowing for the waste of either irrigation or rainfall.

... once a site is heavily thatched, the only effective method is to completely remove the old sod and reestablish the site.

Third, thatch provides the medium for insects and diseases to live and thrive in.

Certain fungi live on dead and/or dying organic matter in the thatch most of the time. However, when the environmental conditions favor the fungi, it can spread rapidly and attack healthy turf. Some surface feeding insects can live during the growing season or overwinter in the thatch zone.

Fourth, thatch can alter the effectiveness of pesticides and/or increase the chance of phytotoxicity from the pesticide. Many of the insecticides used for grub control are readily bound or tied up by the thatch and do not easily reach the soil to kill the grubs.

Herbicides, like preemergence crabgrass materials, can cause considerably more damage to turf on heavily thatched sites since the root system of the turf is in greater contact with the herbicides.

Fifth, it is extremely costly to renovate or reestablish a heavily thatched site. This is further complicated since on many areas (lawns, parks, etc.) mechanical methods of dethatching are used to remove thatch.

Cornell University found that only 5 percent or less of the thatch is removed by dethatcher. This suggests that once a site is heavily thatched, the only effective method is to completely remove the old sod and reestablish the site.

Sixth, applied nitrogen is less likely to be used by the plant on thatchy sites than non-thatchy turf. This is especially true for water soluble nitrogen sources for which it has been shown that a high percentage of the nitrogen can be lost back to the atmosphere. Research on thatch in the Northeast is primarily limited to the University of Maryland and to Cornell University.

Dr. Peter Dernoeden, University of Maryland, is conducting research on the effects of composted sewage sludge on thatch development.

Dr. Jack Murray of the USDA observed that less thatch occurred on plots treated with composted sewage sludge than on plots treated with other nitrogen sources.

In Florida

Thatch management is an important part of turf culture in Florida. It is a subject homeowners and condominium dwellers recognize, but know very little about. It is usually left up to the professional turf manager to deal with the causes of thatch build-up, cultural problems caused by thatch and ultimately, its removal.

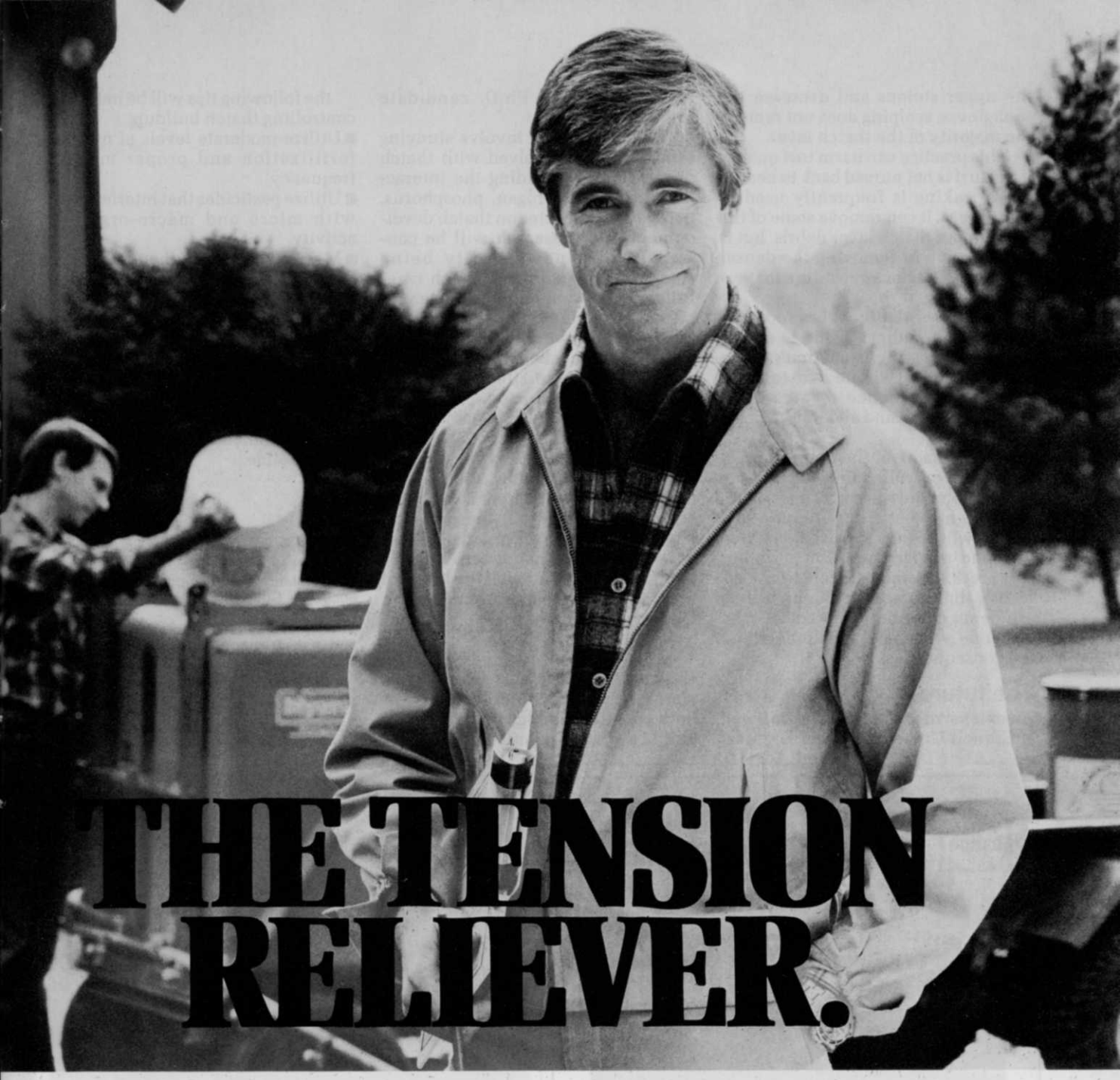
The thickness of thatch in warm season grasses is generally greater than in cool season grasses because of vigorous stoloniferious growth and the coarse texture. It is not uncommon to find a St. Augustinegrass lawn where you literally sink up to your ankles in six inches of thatch, composed of layer upon layer of stolons.

Almost no thatch layers are to be found in some very old bahiagrass, centipedegrass and St. Augustinegrass lawns where there have been minimal turf maintenance practices over the years.

In these lawns, the decomposition of debris is at a rate equal to or greater than the rate of turf production. High temperatures for long periods of the year and fluctuating moisture conditions cause rapid oxidation of organic matter by bacterial and fungal organisms in Florida. A similar situation exists in the drained organic soils of the Everglades agricultural areas which are subsidizing (oxidizing) at the rate of one inch per year. So one can use the environment, to some extent, to help control thatch in Florida.

Many questionable practices are performed on Florida turf areas in the name of thatch control.

Scalping is often done in the early spring. While it may remove some of



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the upper stolons and decrease the sponginess, scalping does not remove the majority of the thatch layer.

This practice can harm turf quality if the turf is not nursed back to health. Power raking is frequently used in some areas. It can remove some of the loose upper thatch layer debris, but is not effective in removing the denser mat layer. It is not a substitute for vertical mowing.

Another of the practices found in Florida is "sanding." This is a very heavy topdressing (sometimes up to several inches) applied to turf. Of course, this practice creates thick layers in the soil and all kinds of problems.

We see many of the cultural practices used on golf courses applied to other urban turf areas. These practices might be appropriate on a golf course where they are used on a regular and proper basis. But on other turf areas, it is questionable how effective these practices can be if they are being done only sporadically by someone who does not understand the consequences.

The future

An extensive project is being initiated at Cornell University under Dr. Martin Petrovic and Ph.D. candidate Robert Vavrek, Jr.

This project will involve studying several factors involved with thatch development, including the interactive effects of nitrogen, phosphorus, potassium and water on thatch development. This research will be conducted in a new facility being completed this summer which carefully controls and monitors water applied, and excludes rainfall by a rain-activated moveable greenhouse called a rainout shelter.

This tenth-acre site will provide useful information on predicting thatch accumulation as related to fertility and water.

Vavrek will also study the effects of microarthropods (mites, etc.) on the thatch development process. Some researchers believe that these insects have little effect on organic matter breakdown (i.e. thatch breakdown), but it has been found that the levels of these types of insects are very high in the turfgrass ecosystem.

Control tips

University research is bringing us closer to a better understanding of how cultural practices affect thatch buildup. From a practical standpoint, the following tips will be helpful in controlling thatch buildup:

- Utilize moderate levels of nitrogen fertilization and proper mowing frequency.
- Utilize pesticides that interfere least with micro and macro-organism activity.
- Maintain the pH in the thatch layer at a level conducive to microbial activity 6.0 to 6.5.
- Maintain a favorable organic matter decomposition environment through core aerification, topdressing and maintaining favorable carbon to nitrogen ratios (25-30 to 1) in thatch.
- Choose cultivars and species that have lower thatching potential whenever possible. **WT&T**

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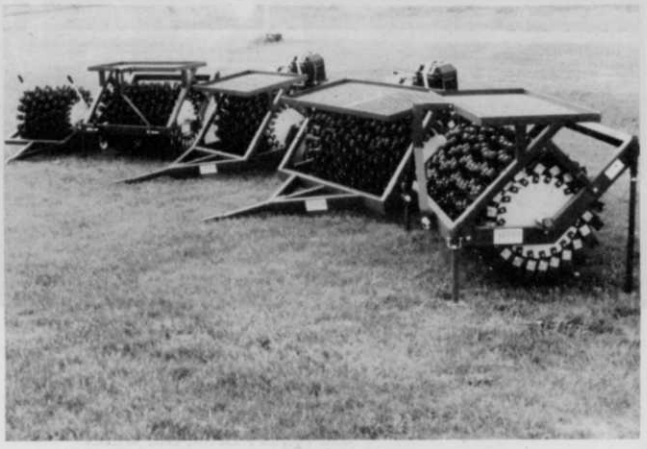

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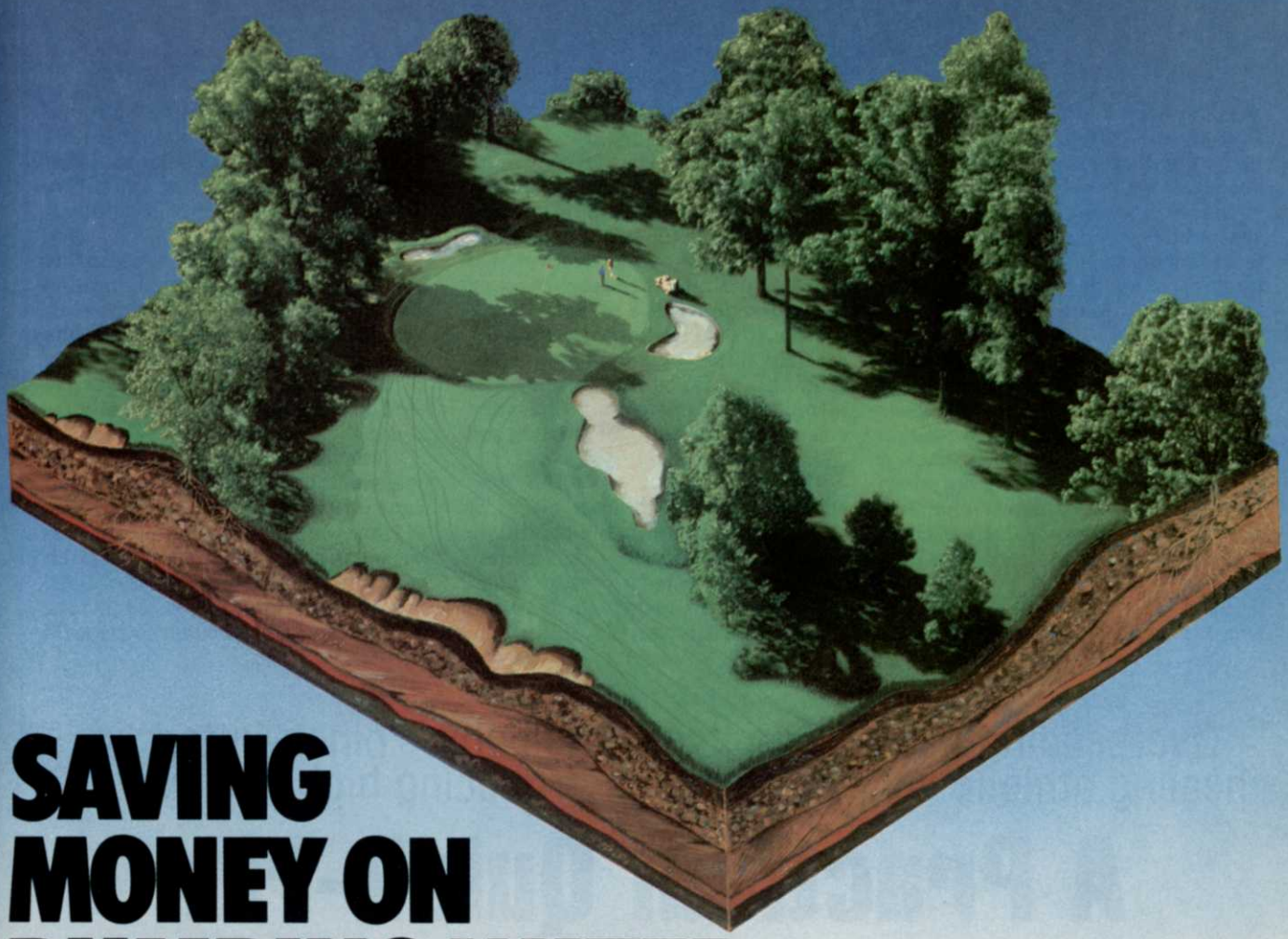

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Water for a Thirsty World

Overseeding has proven itself a valuable "pinch-hitter" in healing athletic field scars and in producing high quality turf.

A Practical Quick-Fix

by Dr. Norman Hummel, Cornell University

In mid-March athletic fields in the northern United States show the scars of battles won and lost the previous fall.

Meanwhile, spring sports teams are already practicing and softball teams are organizing for their summer leagues. The damaged turf must somehow be readied to provide a playable surface for upcoming sports events.

The practice of overseeding is often the only means of providing a turfgrass cover on athletic fields from year to year. There are also times when a home lawn or other turfgrass areas succumb to disease, insects, chemical damage or environmental stress. Here, too, overseeding offers a practical means of repairing the damage and improving the overall quality of the turf.

Hummel is on the extension faculty, turfgrass management, Cornell University).

Overseeding is a partial renovation process used to improve damaged turfgrass areas. Overseeding becomes necessary when the turf is damaged to an extent that it cannot recover with standard maintenance practices, such as fertilization. It is a selective tillage process that falls short of completely reestablishing the entire area. Overseeding can also be used as a means of introducing more desirable grass species or cultivars into an existing sod.

Timing

One of the more difficult places on which to maintain turf is an athletic field. The intense wear that athletic fields are subjected to make annual overseeding necessary to maintain turfgrass quality and playability.

Early fall would be the optimum time to overseed an athletic field because the warm days, cool nights, and adequate precipitation are conducive to rapid establishment of cool season grasses.

However, it is usually necessary to have the field in playable condition much sooner in the year. A more realistic time to overseed is mid to late spring. Dormant seeding in early winter should be avoided because seed germination could be greatly reduced by seed rot.

Honeycomb seeding is a method of overseeding that many old-timers and some not-so-old-timers swear by.

Honeycomb seeding should be performed in mid-February to late March in the northern United States. Seed should be divided into three or four

continued on page 34

A flexible-tine harrow *is an effective method of preparing a site for overseeding.*

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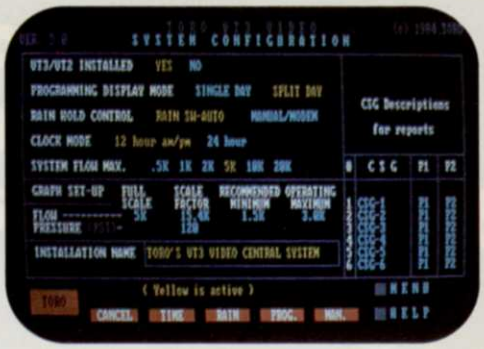

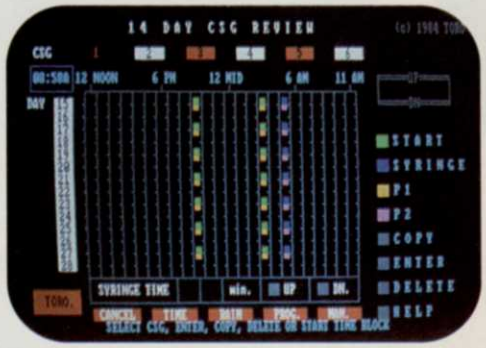

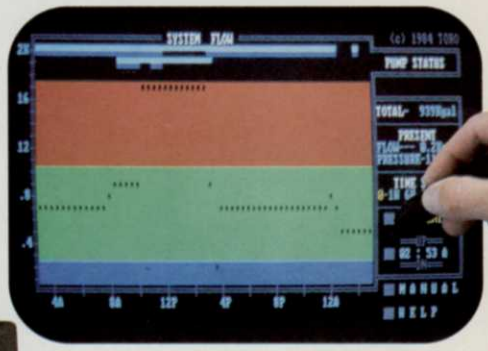

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Always follow label directions carefully when using turf chemicals.

Circle No. 137 on Reader Inquiry Card

Overseeding *from page 30*

equal lots and sown on three or four different days.

The seed should be applied in the early morning when the soil is still frozen but is expected to thaw during the day. The freeze-thaw cycles produce a honeycomb or soil cracking that enables the seed to become embedded in the soil.

The results of honeycomb seeding can be improved if the areas are scarified the previous fall with a flexible-tine harrow or similar piece of equipment.

Many landscape superintendents also feel that broadcasting seed on a field just prior to use is beneficial, assuming that the cleats of shoes will push the seed into the ground.

It is unlikely, however, that much of the seed will germinate and survive, especially if applied much past Oct. 1.

Species, cultivar selection

Successful overseeding begins by selecting the best grass species and cultivars for your area. Fields that receive heavy use should be overseeded with a blend of two or three **perennial ryegrass** cultivars at a rate of five to seven pounds of seed per 1,000 square feet. This quick germinating species is well-suited for athletic fields because it has good wear resistance, it is very easy to establish and is better able to compete with weeds when used in a spring seeding.

However, it is somewhat susceptible to winterkill and since it is a nonspreading grass, it's ability to recover from injury is poor. Therefore, more frequent overseeding will be necessary to maintain density on perennial ryegrass fields.

Kentucky bluegrass is also well-suited for athletic field use. It is attractive, durable and is able to recover from injury. The biggest drawback of Kentucky bluegrass is that it is difficult and very slow to establish, especially when overseeded with sod.

Mixtures of Kentucky bluegrass and perennial ryegrass can be overseeded on fields, provided that the perennial ryegrass component does not exceed 20 percent of the seed mixture. Mixtures with a larger percentage of perennial ryegrass will produce a predominatly ryegrass stand. The differences in seedling vigor make it difficult for Kentucky bluegrass to germinate and establish itself in a vigorous perennial ryegrass sward.

However, if the vigor of the ryegrass is reduced by close mowing (½ inch) for the first few weeks of establishment, then it is possible to produce a true blend of Kentucky bluegrass and perennial ryegrass from a 50:50 seed mixture.

The preferred grass species for home lawns in the northern United States is Kentucky bluegrass. The many improved cultivars now available have such genetic diversity that there are few situations where at least one cultivar won't be adapted.

There are cultivars adapted to sun or shade, high or low maintenance and they are all attractive. Kentucky bluegrass should be overseeded into a lawn at a rate of two to three pounds of seed per 1,000 square feet. This rate is slightly higher than what might be used in bare soil, but it compensates for the reduced germination that can be expected in what are often less than ideal germinating conditions.

The turf type tall fescues are becoming more popular for athletic fields, home lawns and other grounds areas.

The turf type **tall fescues** are becoming more popular for athletic fields, home lawns and other grounds areas.

The new fine-textured cultivars have good drought tolerance, good wear resistance and they are much more attractive than the old varieties such as Kentucky 31. Since tall fescue is also a bunch-type grass, more frequent overseeding will be necessary to maintain density and for the cultivars to maintain their fine-leaf characteristics. Also, tall fescue is very susceptible to winterkill, so its use is limited to rather specific areas in the northern United States. Contact your county extension agent or state turfgrass specialist for the species and cultivars recommended in your state.

Seeding

Once the seed mixture has been selected, the area must be prepared for seeding. Mow the area as short as possible and remove the clipping debris. This step will insure that adequate sunlight reaches the soil surface to enhance germination.

Seed is most successfully germinated when it is placed in direct contact with the soil. Core aerification is an effective means to accomplish this.

Core aerify the field or lawn in at least four directions. Germination will be noticeably enhanced directly in the aerifier holes. Therefore, the more passes made with the aerifier, the better.

Allow the cores to dry, then break them up by dragging the area with a drag mat, piece of chain link fence, or flexible tine harrow. Core aerification prepares a partial seedbed by bringing soil to the surface.

Apply a high phosphorous or starter fertilizer with an approximate 2-4-1 or 3-4-1 ratio at a rate necessary to provide one pound of actual nitrogen per 1,000 square feet. Both nitrogen and phosphorous are essential for rapid establishment and maturation of overseeded turf.

Overseed immediately following aerification. The preferred method of overseeding is to use a disk-type seeder that cuts a narrow slit into the soil or thatch and directly deposits the seed into the slit. The areas should be seeded with a disk seeder in at least two, and preferably four, directions.

When bunch grasses are used, superintendents will often broadcast seed on top of the disk-seeded areas to accelerate the filling in-between the seeded slits. This step could probably be eliminated if the area is disk seeded in four directions.

When a disk seeder is not available, it is possible to further prepare the seedbed by working up the soil surface with a flexible tine harrow. Seed may then be broadcast and the area lightly dragged.

On spring-seeded turf, siduron (Tupersan) should be applied to reduce annual grass competition. Siduron is presently the only preemergence herbicide safe to use in seedling turf.

In 1986 there may be a new postemergence herbicide available called Acclaim that is effective on many annual grasses and is safe to use in seedling turf.

Water the area as necessary to keep the soil surface moist. Mow the area when the grass seedlings are slightly higher than the height at which they will be maintained.

After the newly seeded area has been mowed at least twice, herbicides may be applied as needed to control broadleaf weeds.

Regardless of the turfgrass area being maintained, overseeding is only one step in producing high quality turf. Controlling the amount of play and providing adequate drainage will help preserve a playable turfgrass cover on athletic fields.

Proper fertilization, mowing, irrigation, cultivation, and controlling turfgrass pests will all contribute to a healthy, vigorous turf and reduce the need for overseeding. **WT&T**

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Circle No. 138 on Reader Inquiry Card

With millions of users, thousands of facilities, the previously neglected turf ballfield is gaining the public's respect. Now it needs public support.

Public Sports Turf: Drastically in Need of Standards

by Bruce F. Shank, executive editor, and **Ron Hall**, assistant editor

Orphan Annie and public sports fields have a great deal in common.

Both receive only minimal attention as wards of the state and have the potential to rise to greater status.

The big question is, who will be the Daddy Warbucks of public sports turf?

A significant number of organizations, including this magazine, are trying desparately to find the answer. A summit of all major public sports turf groups was held at the USDA Turf Research Center in Beltsville, MD, in late April to get the ball rolling.

The public sports turf market has the potential to expand the overall turf market as the professional lawn care market did in the 1970's.

This long-delayed market will boom because the public is demanding better, safer fields while public agencies face increased liability for injuries occurring on public fields.

Greater awareness of injury liability and skillful promotion of safer, better built and maintained fields to Parent Teachers Associations and public field user groups, will cause budget roadblocks to collapse under taxpayer pressure.

Roadblocks are not just financial. Current maintenance levels are recognized as inadequate for intensive use. Field construction standards used to build most of today's fields are resulting in poorly-drained, worn-out fields. A major reconstruction effort will be needed after adequate construction and maintenance specifications are developed.

Maintenance Practices*

Practice	Percentage of Respondents Doing
fertilization	92%
weed control	86%
aerification	73%
irrigation	60%
insect control	36%
disease control	29%

Types of Fields Maintained*

Type	Percentage of Respondents
baseball/softball	81%
tennis	69%
soccer	65%
football	62%
basketball	56%
golf course	12%

* 364 responses

Scope of need

In 1983, the National Federation of State High School Athletic Associations in Kansas City counted 14,086 schools involved in football, 13,380 in baseball, 14,414 in track and field, and 4,454 in soccer. Add to these figures the more than 12,000 park systems in the U.S. with a varied assortment of fields.

The scope of public sports turf continues to snowball when you consider junior colleges, state universities, and municipal recreational facilities.

Another perspective of the market is provided by looking at the size of public field user groups. There are more than 2.2 million children participating in 7,000 Little League® programs, more than one million kids playing in other organized summer baseball and softball leagues, and 173,000 teams competing under Amateur Softball Association rules. Add the growing popularity of soccer leagues, and extremely serious overdemand for a limited number of fields becomes undeniable.

Liability

This overdemand only becomes important to public field decision makers when kids get injured and the liability of the public agency is threatened. A recent *Weeds Trees & Turf* survey revealed schools and parks carry an average of $1 million in liability insurance.

Liability insurance used to provide public agencies with comfortable protection against serious fi-

continued on page 40

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HOW TO AVOID SLEEPLESS NIGHTS DURING PYTHIUM WEATHER.

SUBDUE

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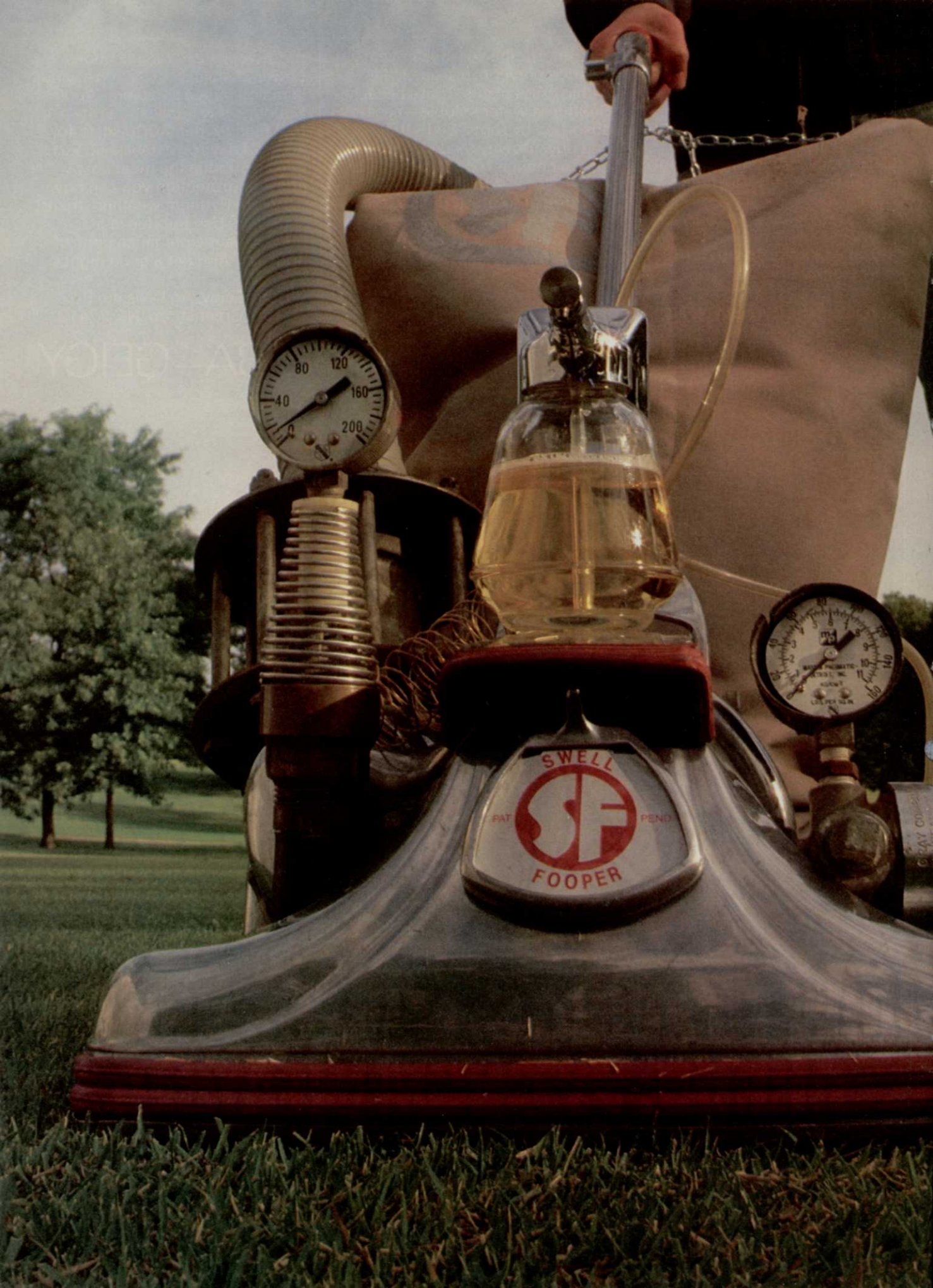
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Circle No. 128 on Reader Inquiry Card

SURVEY *from page 36*

nancial loss to injury claims. But, insurance companies today are actively researching injury rates on public fields for possible rate increases. In the future, insurance premiums may possibly be lower for properly constructed and maintained fields. Then, and possibly only then, decision-makers will move to provide the budgets, equipment, and personnel to keep fields safe.

Demand and injury liability will force public agencies to take field construction and maintenance seriously.

Golf leads the way

The National Golf Foundation was the first to record the growing dominance of the public sports facility in 1983 when it discovered 85 percent of all regular golfers played public courses (daily fee and municipal). Forty percent of frequent golfers played municipal courses, although these courses represented only 16 percent of the total number of all types of courses.

Clearly the golfer is depending more and more on municipal and daily fee courses. In response to increased demand, more municipal courses are hiring contract maintenance companies, such as American Golf Corp., Los Angeles, CA, are growing rapidly.

If an organization like NGF existed for football, softball, baseball, and soccer, a similar or perhaps stronger case for support of public sports turf could be documented. Statistics for both the number and types of fields and number of users are badly needed.

Another sign of concern for public sports turf is the increasing number of former golf course superintendents holding the titles of park superintendent or stadium facility director.

Private sports facilities

In the *WTT* survey it was discovered only 10 percent of leagues playing on public fields pay a significant portion of maintenance costs. More than a fifth of the leagues playing on public fields, however, perform some maintainance tasks.

While a public facility by definition should be open to all taxpayers, intensive use by one or more groups should be supported with additional user fees. Intensive use hours can be limited for the benefit of general taxpayers and the turf.

When sports facilities, such as multi-field softball centers, are profitable on a private basis, then two conclusions can be drawn. First, the public is willing to pay for scheduled use of quality fields. Secondly, the quality of public fields is considered sufficiently lower to pay for private fields.

It follows that landscape maintenance contractors can build a case for better sports fields for a reasonable price. The *WTT* survey showed 11 percent of schools and parks contract out part of athletic field maintenance. Dramatizing this possibility is the fact that 71 percent of the school and park officials polled said they lacked the manpower to accomplish needed sports turf maintenance.

Furthermore, the superintendents responded that equipment expenditures were of most concern to them (64%), more than labor (41%) and more than chemicals (21%). Equipment leasing and contract maintenance are alternatives to rising equipment costs.

Considering that 46 percent of park and school superintendents work with no budget growth and 15 percent with falling budgets, public agencies are being forced to make hard decisions.

Case by case interest

The attitude of public officials in response to public demand is very important to the attention sports fields receive. A winning team or local media coverage may create the dedication needed for adequate field care. More often fields are lumped into the overall physical plant budget simply because they exist, not because they have special needs.

Sports fields must be treated as a unique maintenance function. If the public agency is unable to provide staff for necessary care, then contract maintenance should be used.

Field maintenance contractors need to sell a package specifically designed for sports fields. Bids should meet recognized maintenance standards for specific types of fields.

Public agencies are currently at a loss for such standards. No national park or scholastic agency can currently provide maintenance standards to local schools or parks. The only way they have any idea of what is needed is to contact extension. Extension often lacks these standards as well.

Without standards budgets are impossible to build. Once standards are developed realistic budgets can be established.

Maintenance budgets for the park and school supers polled by *WTT* ranged from $200 to $3 million. The average maintenance budget was nearly $250,000 and the median was $55,000.

When the status of public sports fields is raised to an appropriate level, budgets should not be a problem.

Public golf course budgets are actually higher than daily fee maintenance budgets as discovered in a *WTT* survey published in the January 1985 issue. Maintenance and construction standards exist for golf, but not for many other sports fields.

Without construction and maintenance standards budgets are impossible to build.

There are roughly 160,000 acres of municipal golf courses in the U.S. *WTT* estimates there are at least 250,000 acres of public softball, football, soccer, and baseball fields in the U.S. Using National Golf Foundation statistics for rounds played on municipal courses in 1983 (5.5 million), revenue generated by municipal golf courses ($8 per round) was $44 million. This revenue paid maintenance costs. Some method of generating maintenance funds for public sports fields has to be considered.

A change in status must begin with development of widely recognized field construction and maintenance standards. Then, and only then, can our public sports fields leave the orphanage. **WT&T**

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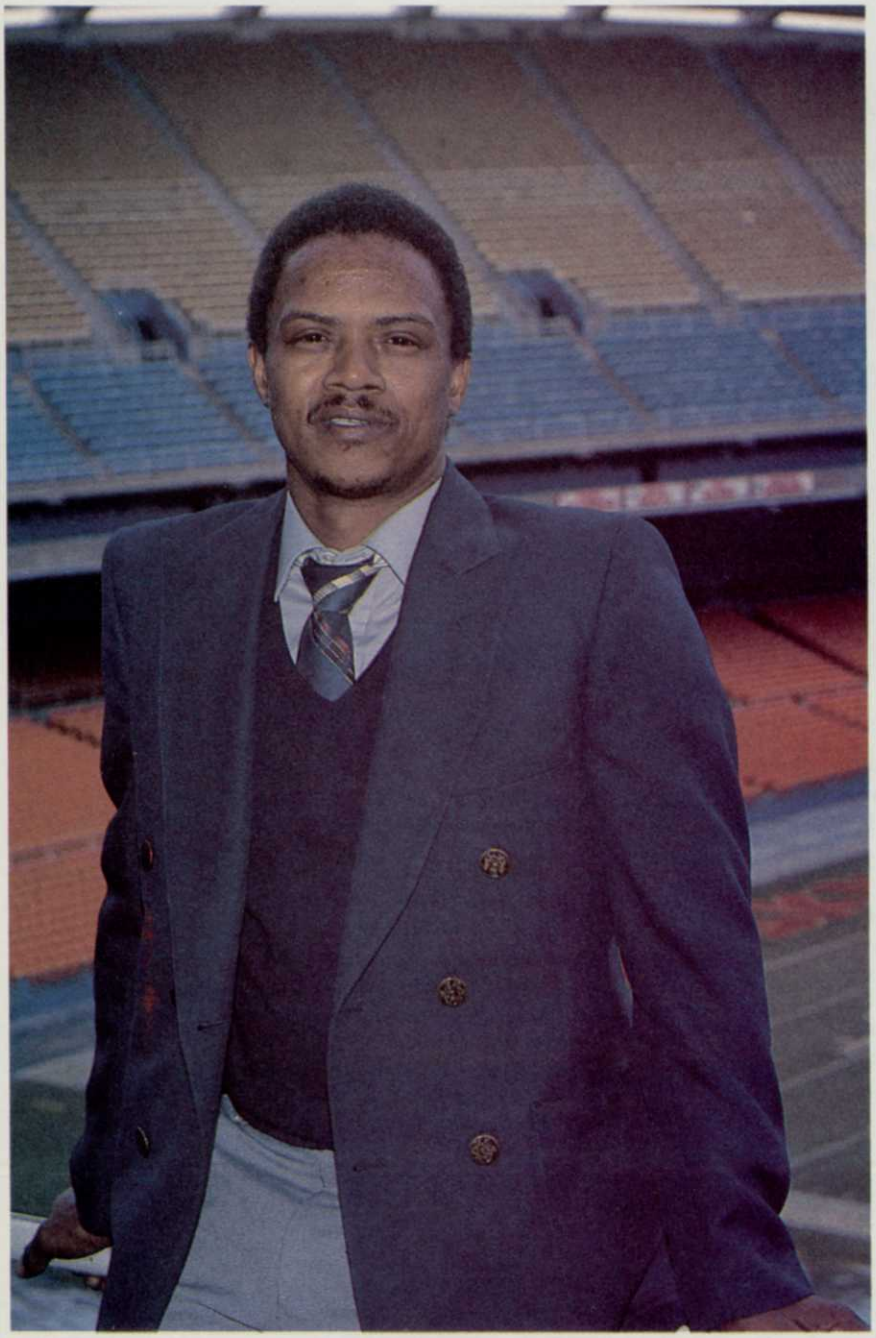
LANDSCAPE MANAGEMENT

The return of professional baseball to Washington D.C. could mean a bigger crew and more work for groundskeeper Tony Burnett, but he welcomes the challenge.

RFK's Turf Is Major League

by Ron Hall, assistant editor



Tony Burnett, *chief groundskeeper at Robert F. Kennedy stadium.*

There's no "Mr. Baggypants" at Washington D.C.'s professional sports mecca.

Tony Burnett, chief groundskeeper at Robert F. Kennedy Stadium, is decked out in snappy blue blazer, tie, pressed trousers. He's got that spiffed-up, ready-to-go-to-a-party look about him.

The "party" could be the return of professional baseball to the nation's capital.

"The majority of the Redskins love natural turf."

—Burnett

There's a buzz in RFK. Smiles. People humming. "Hey Tony, howya doin'?" And the long-suffering fans of the nation's capital (They've paid, oh how they've paid!) sense their 15 years penance is ending.

The once-proud Senators— world champs in '33—slinked out of D.C. about 20 years ago and resodded themselves in Minnesota, smack dab in the middle of Injun' country, proud Washingtonians hurrumphed. Then the expansion Senators. They couldn't get over the hump. Small wonder. They traded the left side of their infield (rifle-armed Aurelio Rodriguez at third, steady shortstop Eddie Brinkman) to the Tigers then hot-footed it to Texas. Rodriguez and Brinkman obliged by helping Detroit to the 1971 American League East championship.

"I'd love to see baseball come back to Washington D.C.," says Burnett, who at a youthful 40 years old is putting in his 25th year at RFK. That's a bit hard to believe because Burnett, trim and soft spoken, just doesn't look old enough to have a high-school-age

continued on page 46

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son (a basketball player) in his household. He looks like he could take a swing or two at the plate himself.

Pro baseball at RFK? "Why not," says Burnett.

"I'm trained as a baseball groundskeeper. Initially I broke in with a baseball team," he says.

That was in 1962. Burnett was fresh out of high school. His boss was Joe Moony. ("He kind of took me under his wing. He's one of the best," Burnett recalls.) And the Senators played in Washington in new D.C. Stadium. Lombardy coached the professional football Redskins.

Lombardy moved to Green Bay, and Moony took over as chief groundskeeper at Boston's Fenway. D.C. Stadium became RFK in 1971, and Burnett became boss groundskeeper.

His number one job since then has been keeping the 'Skins happy; and he has.

'Skins love turf

Natural turf plays a big part in the success of the Redskins, Burnett is convinced. "The majority of the Redskin players love natural grass."

In the category of "action speaking louder than words" the Redskins delivered an oration in the 1982-83 season. They rolled over Miami 27-17 in Super Bowl XVII as aging Mack-truck-on-legs John Riggins gained more than 100 yards in four consecutive playoff games (a record).

Could it be that RFK's modified Prescription Athletic Turf (PAT) playing surface contributes to Riggins longevity as a power back? Larry Csonka, the former all-pro bulldozer for the Miami Dolphins thinks so. Speaking about artificial turf, Csonka once told writers, "it can finish every player in the league before his time. Let the engineers play on it. I hear there's a guy off somewhere working on a different weather-resistant surface. It's called grass."

But growing grass isn't as easy as it looks, not in D.C., however, which is in the so-called "transition" zone. Burnett tried Kentucky bluegrass after the sand-based PAT system was installed in 1975. He abandoned bluegrass in favor of Bermudagrass the following year even though it goes into dormancy about the time the Redskins start play.

"The last four years we've used three different Bermudagrasses," Burnett says of his field which is resodded each June. "Last year we used 419, but I might try a new one next year if I think I can get a better stand."

Much of Burnett's maintenance schedule is now common practice on many professional sports fields: overseeding with a pregerminated ryegrass blend before and after every game, aerification (he uses a Ryan Greensaire II and a piston-driven Hahn Aerifier II) about every 10 days during the Bermudagrass growing season, application of about ½ lb. nitrogen in water-soluble 16-8-8 at regular intervals, and mowing (he uses a Toro Professional 76 and a Jacobsen Turf King) every other day when the Bermudagrass is growing, twice a week for the ryegrass.

"Washington is going to end up with an expansion baseball team."

—Dalyrmple

Pros destroy turf

Neither the PAT system (which Burnett swears by) nor good field maintenance procedures can compete with the damage of a professional football team, however. Burnett claims the turf on a professional football stadium starts to deteriorate, particularly in the center of the field, soon after the season begins.

It's the groundskeepers job to slow down the deterioration. That determines his worth.

Says Burnett, "professional football creates a tremendous amount of pressure on a playing surface. College games don't come close. I've had both games here and after a Redskin's game it's like a bunch of cattle have been out there. When those big linemen dig in, they really dig in. And here at Washington they like to run. Those running plays compound the problem."

Vince Lombardi, who coached at D.C. when Burnett started his career, had definite feelings about field maintenance.

"Lombardi once told me, 'I don't care about your blankety-blank-field. Level it out, roll it, and mark it. We'll play on it.' He didn't particularly care about how a field looked, but he wanted it to play good," Burnett recalls.

"You can have the best looking field in the world, but it may not play well. We are more concerned about the structure of the field than just having it look good. The root structure is more important than the leaf."

When it comes to preparing a field for a game, Burnett says just about anything (including dyeing a field for the television camera) goes. "We do anything and everything to get this field ready," he says. "When the whistle blows on Sunday that field has to be ready. That's the bottom line."

The bottom line for Burnett, however, isn't just RFK Stadium. He maintains a pair of nearby practice fields that are used by the 'Skins in the summer and by area colleges for soccer in the spring. And snow removal in the parking lots of the Starplex complex, which includes the stadium and an adjoining arena, also falls within his responsibilities.

His position is unique. He works for the D.C. Armory Board, a quasi-governmental agency, which manages RFK. Burnett calls it a "beautiful" situation.

"We create our own revenue through events," he explains. "We are not subsidized. That makes it good when we need equipment because when we need a new piece, we go out and get it." With D.C.'s star rising in baseball circles Burnett might be needing additional equipment a year or two down the road.

How close is D.C. in returning to the major leagues?

"Washington is climbing rapidly with the baseball people," Jim Dalrymple, general manager of the D.C. Armory, which takes care of the stadium, says.

"We have a committee that the Mayor has put together and it's been *very, very* active. There's no doubt in my mind that Washington is going to end up with an expansion baseball team."

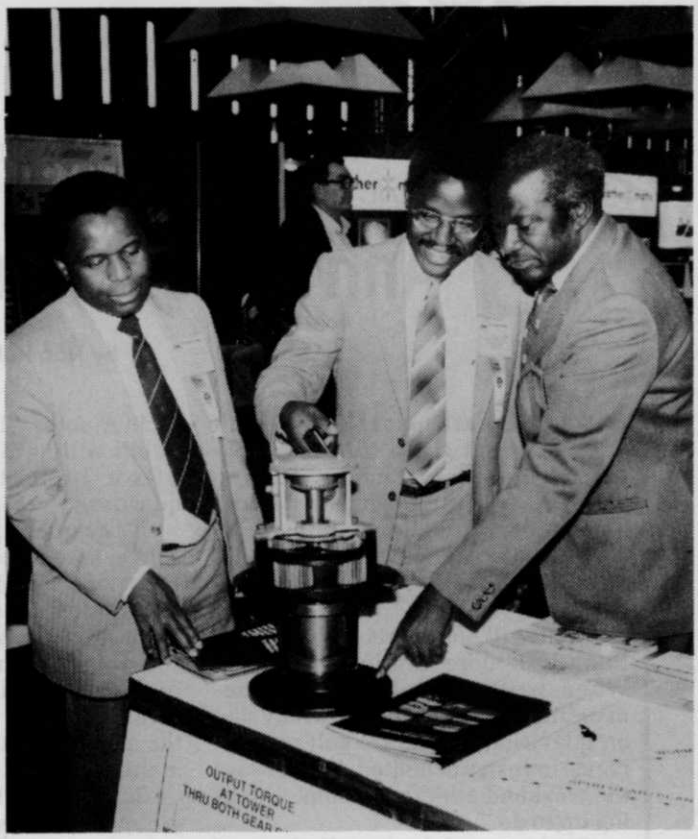
Proponents of baseball in the capital have gone so far as to suggest $16 million in improvements to RFK to entice a new club. Frank Smith, Jr., chairman of the D.C. Baseball Commission, reports that the cost could be decreased by $1.25 million by keeping a natural grass playing surface.

Optimists in D.C. are hoping for a National League franchise by the end of this year.

"I don't know how a baseball team would affect me right now, but I know it will mean a bigger crew," says Burnett. "And," as he flashes a broad smile, "a whole lot more work. I'm excited about having baseball again."

WT&T

COME TO THE FEAST



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Fichter's Rule: "The impetus for good fields must come from the users. If the public demands good fields, then we'll have to provide them."

Ann Arbor's Soccer Showcase

by Ron Hall, assistant editor

He's 39. His dark hair is flecked with gray. He's not given to pronouncements. But, Gary Fichter, the top turfman in the Ann Arbor Department of Parks and Recreation, says a community's athletic fields will only be as good as a community demands.

Fichter likens sports turf to something he's more familiar with, golf. When weekend golfers began demanding the types of courses they saw on television, the entire golf maintenance industry benefited. Fichter says the weekend athlete has some catching up to do.

"Right now, I don't really know if the public wants good athletic fields," Fichter notes. "I mean, how far is the public willing to go to get them? I don't often hear those good hard questions."

It's a curious pose for the the city's golf course superintendent. But the Cleveland, Ohio, native with a luxuriant brown moustache has a lively six-year-old son playing in the local soccer league and a daughter waiting in the wings. Also, his experience in turf makes him a valuable helper in the park department's athletic field maintenance.

But, back to Fichter's Rule, and a group of citizens, the Ann Arbor Soccer Association (AASA), who help prove it.

Fuller Park

The AASA pushed for top-rate playing facilies. A progressive city responded. The result is city-owned Fuller Park, a picturesque soccer complex tucked in a bend of the serpentine Huron River.

The Fuller Park soccer fields now showcase some of the best amateur soccer in Michigan. The fields are used by the AASA which provides top-level competition for 400 adult and 500 adolescent players. These are the skilled soccer players in this college town of 115,000, that lays claim to being home of huge Michigan University.

A few years ago Fuller Park was

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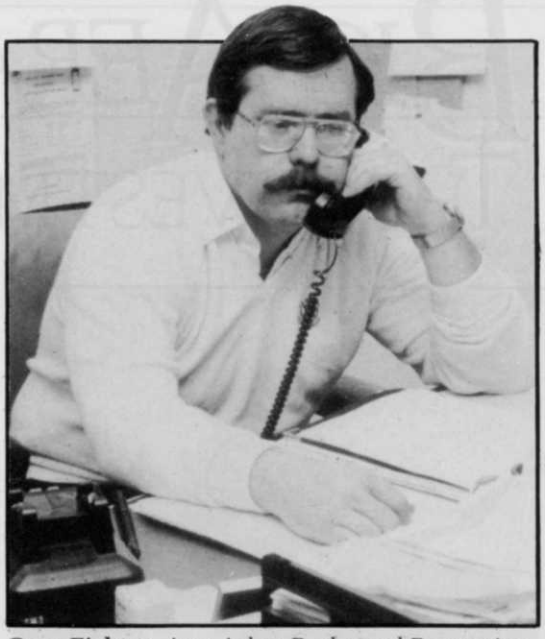
part of a sagging 18-hole golf course. In the mid-1960's the course was reduced to nine holes, and in 1974 abandoned altogether. For a few years at least, Fuller Park sported little more than a healthy crop of weeds.

The Association's move to Fuller in 1978 wasn't without a few rough spots. Indeed, when the AASA began play, the park resembled what it had been, a broken down golf course. Scoring paths to the goal often took players over dilapidated tees and greens. Turf on the natural-soil fields at Fuller Park disappeared under the pounding of intensive spring and fall play.

Fuller wasn't safe for soccer.

The AASA asked for help.



Gary Fichter, *Ann Arbor Parks and Recreation Department.*

Help needed

"About three years ago we offered to match money to regrade and resurface the fields," AASA President Hugh McPherson says "Then about a year after that the city ran a park millage, and we again approached the city, this time about putting in irrigation."

Ann Arbor and the Association inked a five-year pact that would see the city contributing $100,000 in materials and services. The AASA puts up $15,000.

So far the financial arrangement seems to be working well, although there is a slight disagreement over the condition of the playing surfaces.

"It's got to be the nicest soccer facility in the state," says the AASA's McPherson.

"I think they were expecting a Mercedes. When I only delivered a Cadillac, they were disappointed," says Fichter as he surveys the grass soccer fields.

McPherson is obviously pleased with improvements at Fuller. The turf, however, is still not what it should be, Fichter feels. Years in golf course maintenance (and a stint in his own lawn care company) make him his own worst critic.

After earning a B.S. degree in agriculture from Ohio State University, Fichter switched directions by going heavy into turf. He served as assistant superintendent at Sylvania Country Club, Toledo, OH, before an eight-year stint as superintendent at Ironwood Golf Club in Northwestern Ohio, "a real learning experience," he recalls. He helped develop the then-new Ironwood course. Several years in his own lawn care company preceded a move to Ann Arbor.

In the two-plus years he's been in Ann Arbor, Fichter has taken solid steps in rebuilding the playability and popularity of the public Leslie Park and Huron Hills golf courses. His turf training allows him to help with the ball diamonds and soccer fields, too.

The rebuilt Fuller Park fields could be his showcase.

Renovation begins

Renovation began with a regrading of Fuller in August 1982. Workers removed tons of topsoil and stockpiled it for reuse. No other topsoil was added. This was a "good news, bad news" situation. The original soil consists of loamy sands which drain well but are "droughty", not the best environment for strong, young athletic turf.

Next, a Brillion seeder spread a mixture of grasses—25 percent Adelphi and 25 percent Parade (both Kentucky bluegrass), 25 percent Galway (tall fescue), and 25 percent NK200 (perennial ryegrass) at a rate of 150 lbs. per acre. The fields were mulched with straw, two tons an acre. Fertilizer, 12-12-12, preceded seeding.

Fichter reports germination "was only slightly satisfactory" by the spring of 1983 with a turf cover of about 50 percent, and 95 percent of that ryegrass.

More work was needed.

Irrigation added

In 1983 funding became available for irrigation, and Fichter oversaw the installation of a Toro system which sucks water from the bordering Huron River to a wet well and then to the Toro 640 pop-up heads. Fichter says the addition of irrigation might be the key to Fuller Park's soccer fields.

Prior to irrigation in mid-summer 1984, the fields (overseeded in May with Kentucky bluegrasses Adelphi, Baron, Eclipse, and Glade) showed only a 50 percent cover. With the addition of irrigation, use of Trimec for broadleaf control, and applications of 29-0-14 at 1½ pounds N/1000 in August and 1 pound N/1000 in September, "turf quality improved immediately. . .we had 95 percent cover of quality turf with 50 percent being Kentucky bluegrass," he explains.

Now that the agronomic pieces are in place, Fichter wants to finish the puzzle of Fuller Park's turf with a strong maintenance program.

Says Fichter: "Right now the top priorities for these soccer fields are building up fertility levels, aerification, weed control, and overseeding."

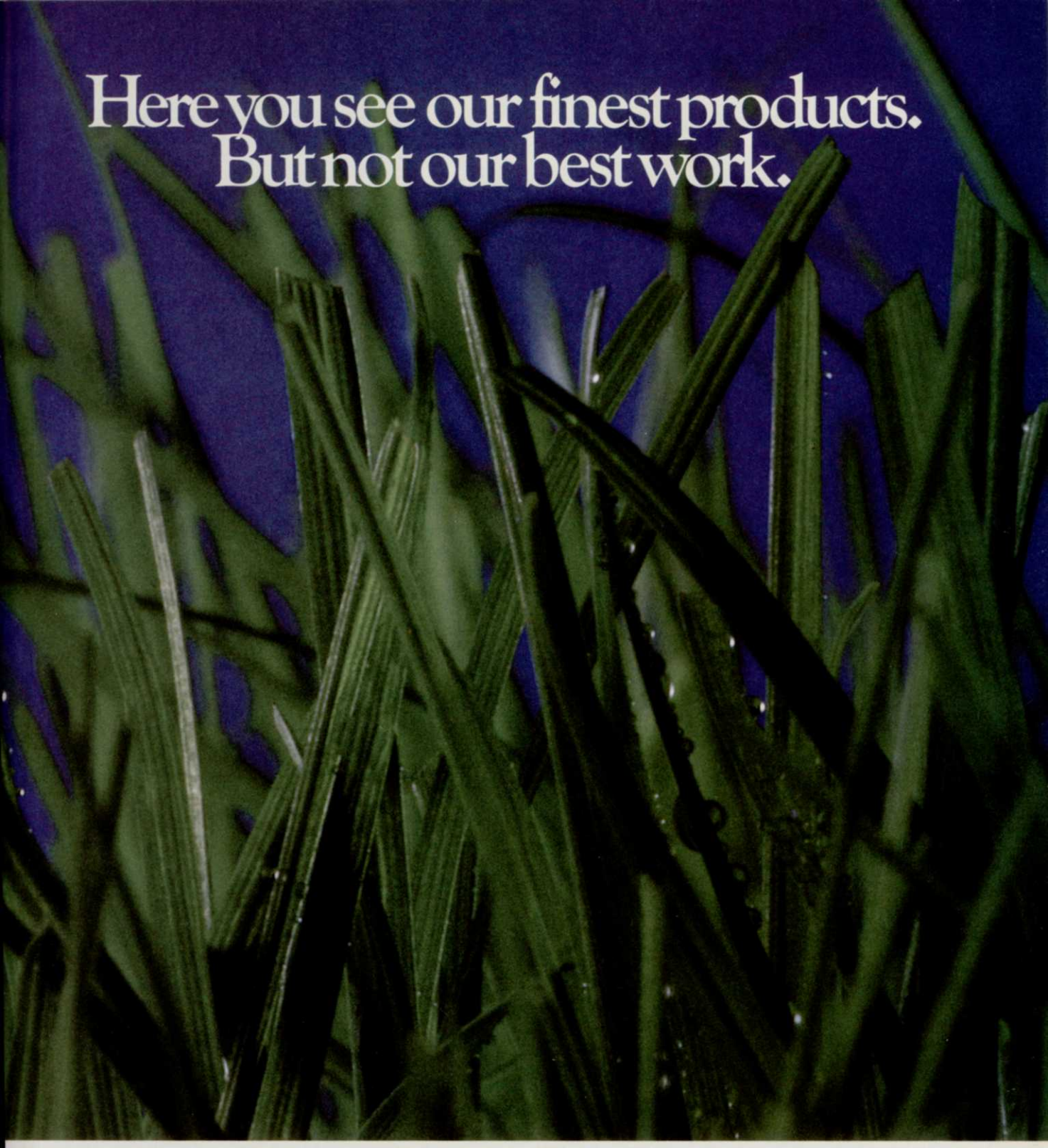
The 1985 season should see the fields getting four applications of 29-0-14 at 1 pound N/1000, broadleaf weed control as needed, and a mid-summer aeration with a Dedoes trailer-type aerifier. The turf will be maintained at a 1 ½ -inch cutting height with a Brouwer 7-gang mower.

Overseeding is a big part of the program, but Fichter needs the help of the Association. "We're going to give them the seed and ask them to apply it to the goal mouths and other high use areas on a weekly basis," Fichter says. At least two different types of perennial ryegrasses will be used. In August the entire complex will be overseeded using a Jacobsen thatcher/seeder.

"Right now I don't know if the public really wants better athletic fields. I don't know if they're ready to demand them like golfers demanded better courses," Fichter says.

"The soccer association asked the hard questions. It said, 'look at those fields. They're atrocious' and it acted. You wouldn't see nice fields at Fuller if that group wasn't behind it."

Or if Fichter didn't think he could do a bang-up job with the turf. **WT&T**



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LANDSCAPE MANAGEMENT

The Cincinnati Bengals professional football team counts on a local maintenance company to give it good practice conditions at Spinney Field.

'Practicing' Class

by Ron Hall, assistant editor

Bengals work out *on two-year-old PAT facility at Spinney Field in Cincinnati, OH*

Not exactly chump change $28,000, not even in the megabucks world of professional sports. It buys a lot of turf maintenance on the Cincinnati Bengals practice fields at Spinney Field.

The Bengals management feels it might be the finest practice facility in the National Football League. The two-year-old Prescription Athletic Turf (PAT) field is cared for by a private Cincinnati company, Motz Environmental Services. The adjoining synthetic grass practice field is just a year old.

Money counts

Contrast this with the $1,600 the schools at Goshen, IN, budget for the care of their football fields. The *dollar* might be the single greatest variable in the equation of providing athletes with safe playing conditions, not that it always tells the complete story.

> **"You can't aerate too much"**
>
> ***—Motz***

"I think we provide excellent conditions at our fields on a reasonable budget. As a taxpayer, I know this is appreciated," says Richard Kercher who advises in the care and maintenance at Goshen's Foreman Field, one of the first PAT fields built about 12 years ago. Kercher's efforts are voluntary. That's often the way it is in many budget-strapped schools and park departments.

The gulf between the care of professional and playground sports fields

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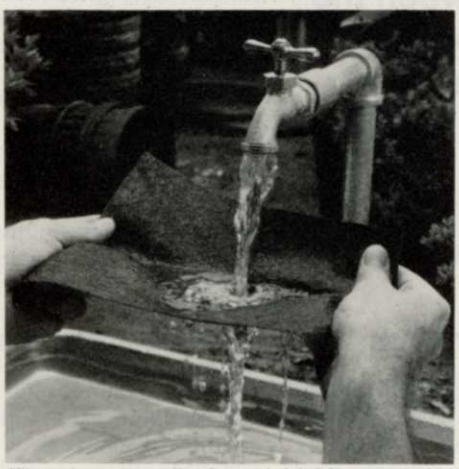

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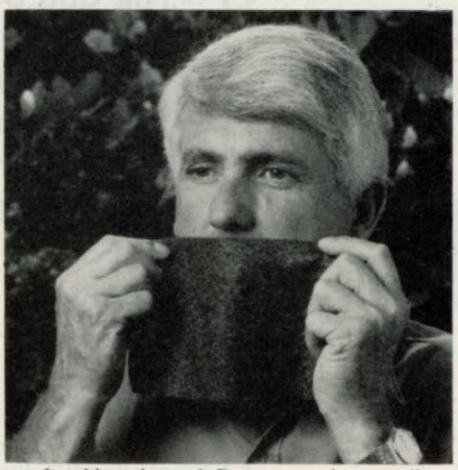

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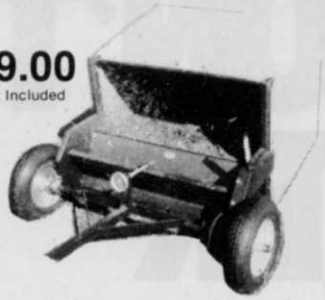

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seems to be widening regardless of the number of athletes using them or the amount of wear they receive. The numbers that count are $$$ numbers.

Barney Barron, superintendent of parks in San Francisco, last fall provided members of the Sports Turf Managers Association with a comparison.

Candlestick Park, home of the San Francisco Giants professional baseball team, is maintained by a four-man crew and budgeted $75,000 for supplies. The turf is mowed three times weekly, aerated four to six times annually, fertilized every seven to 21 days (or as needed), and treated with fungicides as a preventative measure every 10 to 21 days. In six months 81 games are played there.

The gulf between the care of professional and playground sports fields seems to be widening regardless of the amount of wear they receive.

In contrast, a typical ball diamond in a San Francisco park might host 81 games in four weeks, is mowed weekly, aerated once, fertilized twice, and is treated with fungicides on a remedial basis only. The combined budget for *all* park diamonds is $165,000. Significantly, Candlestick brings in revenues of about $1 million while the public diamonds don't generate enough cash to cover their expenses.

Big business

Professional sport is a business with television contracts exceeding the GNP of some third-world nations and almost incomprehensible salaries. Organizations view the health of players as an investment, and professional teams like the Bengals cast an exacting eye to practice fields. They'll pay for professional service.

"It's worked out quite well for the Bengals," says Joe Motz. "Our contract has come up for renewal twice and they've had two opportunities to look at it. They're very shrewd business people."

Motz (pronounced like "most") came on site in August 1983, shortly after the sand-concept PAT field was constructed by Dixie Irrigation, Louisville, KY. Actually the PAT concept field with its sub-surface irrigation covers 2.3 acres of Spinney Field, an area considerably larger than a football field.

The turf, a combination of five different varieties of Kentucky bluegrass, is kept full by spot seeding with a mix of sand, Michigan peat, and perennial ryegrass. Pre-germinated perennial ryegrass, a trick borrowed from Kansas City groundskeeper George Toma, is used when time is a factor. "Toma's pre-germination tactics were a tremendous boost to the entire industry," says Motz, a 1977 graduate of Ohio State University.

The turf field is mowed weekly with self-propelled reel mowers. Tupersan is used as pre-emergence (usually in conjunction with seeding), and this season Motz says he will be using eight pounds of nitrogen 4-1-2 (he used 12 the first season) to feed the grass.

The PAT field requires special handling, Motz relates, including lots of aeration "to prevent sealing off the surface" and the addition of tons of sand. "You can't aerate too much. We go four to six passes and then we bring in 40 to 45 tons of sand to fill in the cores," says Motz. "We pour a tremendous amount of sand onto our fields."

"We feel the practice facility should be in just as good shape, or better, than the playing field"

—Motz

As far as irrigation, Motz believes in letting the turf "call for water" before turning on the sprinklers. Spinney is equipped with both sub-surface and surface irrigation. "You don't want the turf too lush," he says, "but you've got to have it moist enough that it provides firm footing."

Motz says the agreement his company has with the Bengals is mutually beneficial. The $28,000 cost also includes the cost of maintaining 3/4 acres of perimeter area and marking the fields on a bi-monthly schedule.

"We feel the practice facility should be in just as good shape, or better, than the playing field," he says. **WT&T**

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WTT/LCI

Paying to Play

by **Ron Hall**, assistant editor

A new softball complex in Tucson is free enterprise's answer to the question of providing quality playing conditions for weekend athletes

Rising moon signals *the rise of slowpitch softball that is played into the night on many fields. The inset shows Jim Munson (left) discussing mowing of Sports Park field with Jim Hilkemeyer and groundsman Ed Rostenhausler*

In the shadow of the craggy spine of the Tucson Mountains, "pay for play" softball is digging its cleats into the alien (at least in Southern Arizona) softness of moist Bermudagrass turf.

Private enterprise is in the softball business in a multi-million dollar way. It is building fields, signing up leagues, and scheduling games.

Here in Tucson the profit approach to what was previously a park and recreation department service is just getting off the ground.

"It's not proven yet that this is a money-maker," says Jim Hilkemeyer, one of the partners in Tucson's six-month-old Sports Park located on a leased 50-acre tract in an otherwise undeveloped Pima County park. "There is no formula in this industry yet."

Pieces in place

Indeed, there isn't, but the pieces for success—at least at Sports Park—are in place.

With melted-butter afternoons, neon sunsets, and 2,000 new residents each month, the greater Tucson area is vibrating with energy. And public agencies, like park and recreation departments, are straining to meet the demand for services. Slowpitch, a game that was foreign here just 12 years ago, is exploding in interest and participation, and outgrowing the ability of a "land rich, but cash poor" parks and recreation department to serve it.

That's not the case everywhere, however.

While new private softball complexes are sprouting in Albuquerque, Cincinnati, Houston, Los Angeles, and Atlanta, others have germinated, flourished briefly, then withered in the heat of poor business practices or competition from public facilities which usually charge lower team entrance fees.

"You can't have a good softball complex without irrigation"
—Swint

"These facilities (private complexes) are businesses. They've got to be run like businesses and not play toys," says Chuck Hawke, the young pro shop manager at Miller's Woods softball complex in Overland Park, KS, one of the more established and successful of the private parks. Miller's Woods accommodates many of the approximately 1,000 adult teams in the Kansas City-Overland Park area, and its summer leagues are almost at "the saturation point," Hawke reports. Just 15 years ago barely 100 adult teams played slowpitch softball in Kansas City.

These facilities are businesses. They've got to be run like businesses and not play toys"
—Hawke

The bottom line of building a profitable ballyard is attracting ball players, their wives and families, and keeping them at the complex for more than just a seven-inning, one-hour-limit game. The payoff comes from the sale of everything from softball paraphernalia to suds and pizza.

The carrot on the stick is professional-style grass playing fields.

"Unfortunately, most of the people who take care of softball fields don't really know how to tke care of them," says Jim Swint, who manages Fun Valley in a contract agreement with the City of Hutchinson, KS.

First class fields

With investments like the $1.3 million it took to build the six softball diamonds and two club houses at Tucson's Sports Park, providing first-class playing surfaces is critical to the success of the private softball park idea.

It's also a mammoth job.

The turf at these private parks is pounded by almost daily use, in Tucson from March to November. Eighty five teams used the Sports Park fields this spring. During the peak of the season the number of teams could jump to 300. At Miller's Woods an estimated 8,000 contests are played on eight diamonds, while at Fun Valley in Hutchinson, KS, an estimated 5,000 games are divided on seven diamonds. Each field might be used as many as four times a day for up to eight months.

Jim Munson, a former supervisor for Pima County Parks and now general manager of Sports Park, says overseeing the care of his fields, sodded with Midiron Bermudagrass last January, might be his most exacting task. "We want to provide all the things a softball player needs and some of the things he often can't get at a public park, including quality play."

Golf course approach

The management of Sports Park borrows from the golfing industry in its approach to field maintenance.

"We want to keep everything as attractive as we can, like on a golf course," Hilkemeyer says. The Bermudagrass is overseeded with annual ryegrass for an early spring greenup. The turf is babied with smaller equipment.

Mowing—it takes about an hour per field—is done with a Toro Turf-Pro reel mower, and the clippings are immediately gathered by rows of sweepers pulled by a Honda Big Red ATV with turf tires. The ATV also pulls sprayers, aerifiers, and the Maxwell Steel Company scarifier/drag for the infield grooming.

Irrigation, however, might be the key to keeping these private parks first rate.

At Miller's Woods they played for 43 straight days without rain last summer. The park's irrigation system literally sucked a nearby creek dry, and the fields had to be irrigated with city water.

"You can't have a good softball complex without an irrigation system," says Swint, executive director of the 60-member Softball Owners and Directors of America (SODA). Most of the owners of private complexes are members of SODA, a four-year-old association which began four years ago with just five members.

Conservation questions

In arid Tucson, the largest American city to be supplied exclusively by wells, irrigation is essential—and touchy. The nearby Santa Clara and Rillito Rivers are a ribbon of dust by the time they approach the city for much of the year, and newly constructed golf courses are ordered to use only effluent for irrigation. Although the Central Arizona Project will divert water from the Colorado to a reservoir in the mountains just south of the city within the decade, water will likely remain a political issue for rapidly growing Tucson.

The Rain Bird sprinkling system at Sports Park takes its water from a well located near an old landfill site which qualifies it for use in irrigation. But developers of the complex also used some clever design techniques to conserve water.

By constructing a major-league-style warning track just inside the home run fence and extending the dirt portion of the infield an extra 10 feet beyond the bases, the amount of turf at each field is reduced. Less turf, less mowing, less needed water.

Another obvious benefit of the warning track is the elimination of mowing and trimming along the 10-foot-high fences.

Conservation also prompted the installation of drip irrigation and bubbler systems to nourish the hundreds of quick-growing oleander which should green out and provide a solid green backdrop behind the home run fences.

"It's still taboo to charge the kids, and it should be"
—Hilkemeyer

Other drought resistant plantlife at Sports Park include jasmine, native mesquite, eucalyptus, and Mondale and Allepo pine, two natives of the mid-east well suited to arid Tuscon.

Softball, and its manicured and heavily maintained fields, is the primary drawing card to these new turf recreational complexes, but Hilkemeyer, who has been in both the bowling and skating businesses, feels more attractions might still be needed to make the project payoff. Sports Park also offers volleyball on professional *beach-type* courts. A Bermudagrass soccer pitch for adult leagues is on the drawing board. Eventually a mile-long "people trail" for jogging and bicycling should encircle the 50-acre complex.

"We've tried to design a situation where people will want to stay longer," says Hilkemeyer, a situation "where it's convenient for people to spend an extra buck."

Hilkemeyer does not foresee the growth of private ball yards for youth leagues (Sports Park allows the use of its fields for special youth events) because it's "still taboo to charge the kids, and that's the way it should be."

Adults, however, "They have to pay to play." **WT&T**

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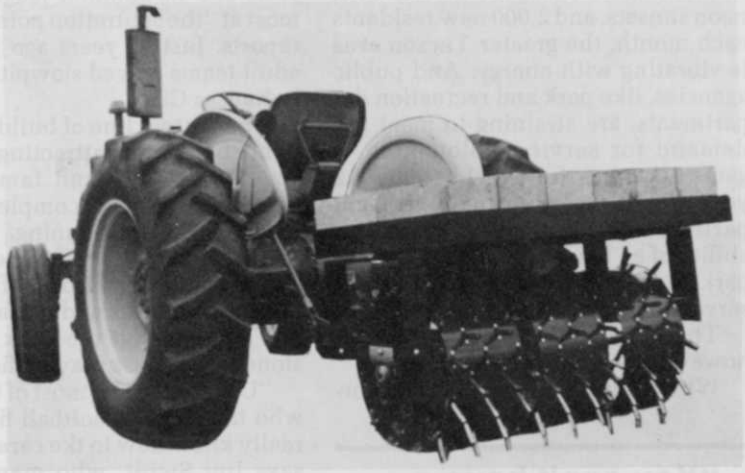

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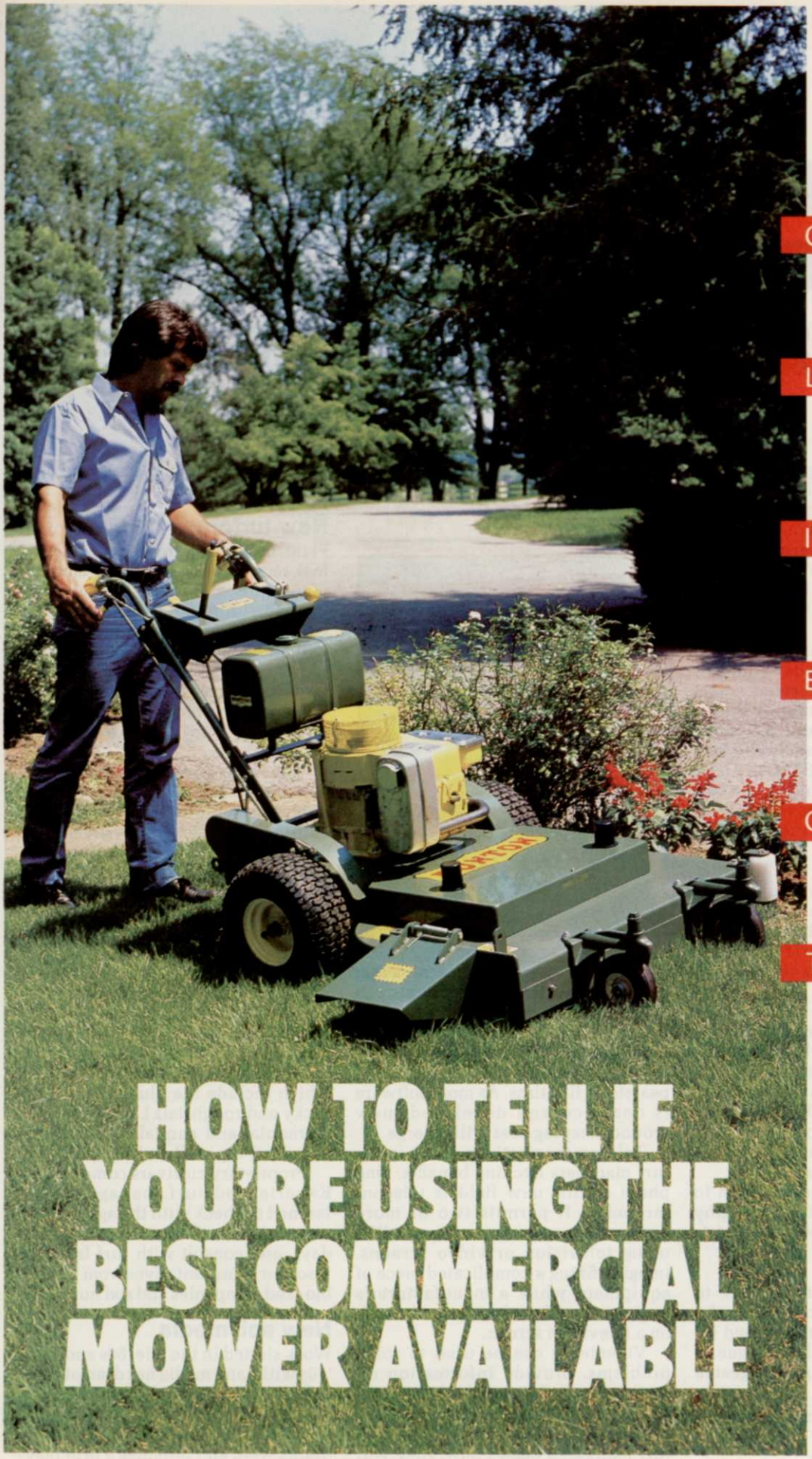

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Advanced Technology Helps Sports Turf Managers Leave the 'Dark Ages'

by **Dr. Kent Kurtz**, executive secretary, Sports Turf Manager's Association

The primary challenge of the sports field manager today is to bolster his prestige and decision-making image, while continuing to gain agronomic knowledge. His hard-earned experience and the varied nature of his responsibilities warrant it. The initial target of these efforts should be management.

The tools are present.

In addition to such aids as the new generation of computerized sprinklers and hardier and more wear-resistant turfgrasses, today's sports turf manager can turn to the Sports Turf Managers Association (STMA). An infant organization, it could be the best bet turf field managers have in gaining the professional status they deserve.

GCSAA a model

Sports turf managers could learn much from the success of related organizations; one of the most successful is the Golf Course Superintendents Association of America (GCSAA).

The GCSAA, over a 60-year journey of education, testing, and image building, has elevated the *occupation* of greenskeeping into the *profession* of golf course superintendent. The GCSAA's continuing efforts are highlighted in an annual conference and strengthened by regional seminars and education programs.

The sports turf manager's path to professionalism needn't be as lengthy because of the model of the GCSAA.

The future

The era of the computer is here to stay. It is making inroads into the Green Industry. Computers speed inventory. They take much of the guesswork out of irrigation. Knowledgeable sports turf managers are learning that computerized irrigation systems can apply water based upon soil moisture levels, climatic variations, or the needs of specific turfgrasses.

The potential of computers appearsto be limitless. As more software is designed and developed, new groundskeeping uses will emerge.

Telecommunications offers sports turf managers exciting benefits. One phase of this new field is teleconferencing. It permits two or more groups to communicate via satellite using television or video screens. Imagine fixing a complicated piece of equipment while a manufacturer's engineer "walks" the repair through on a television screen.

Videotapes can be used to solve problems, provide information on maintenance practices and research, and stimulate the development of new concepts. Rarely used in sports turf manager's offices now, they will become as commonplace as rakes in the near future.

Management Tools for Sports Turf Managers

- Computers
- New Turfgrass Cultivars
- Geotextiles
- Pre-germination
- Improved Turfgrass Equipment

New turfgrass cultivars

Plant breeders are beginning to unlock secrets in the hereditary complex of turfgrasses. New techniques promise that within a few years genetic engineering and tissue culture methods will allow plant scientists to develop sports turf grass that has even better wear tolerance, recuperative potential, color, tolerance to low mowing, and more rapid establishment qualities.

New warm season grasses which indicate potential for sports turf, appear to be selected zoysiagrass cultivars from the University of California, particularly 'El Toro' and possibly one or two others. Tifway II hybrid bermudagrass has the capabilities to perform better than Tifway. 'Excalibre', which is Seashore Paspalum, needs more time to prove itself as a sports turf. Californians are still waiting for a brilliant geneticist to develop a finer-textured cultivar of Kikuyugrass.

Cool season grasses adapted to athletic turf are limited to a few species which include the bluegrasses (Kentucky and roughstalk), the ryegrasses (perennial and annual), and the fescues (turf-type tall and creeping red).

Proprietary cultivars come and go. Experienced turf managers have learned to check with the agricultural universities in their areas, attend field days, and consult with turf farm advisors or representatives from reputable seed companies and sod nurseries.

New soil media

Work started in the late '60s and early '70s with sand media has dramatically influenced sportsfield construction. Sand in the medium particle range is needed because it does not compact, drains well, and provides a firm play-

Dr. Kent Kurtz is the executive secretary of the Sports Turf Manager's Association, 1458 N. Euclid, Ontario, CA.

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ing surface. Field construction concepts and techniques developed around the sand concept include: PAT, Hy-Play, Sportsturf Fields (TD, INTERLINK, and MOD), and Cellsystem. Some of these combine moisture sensing, soil heating, subsurface irrigation, maximum drainage, field pumps, and insulated covers. Any of these systems, if properly implemented and maintained, performs well.

Geotextiles

New geotextile (ground cover) materials are available. They're finding increased favor with sports turf managers. They've proven successful in saving turf during periods of severe wear (concerts, marching bands, motor events), improving field drainage, and protecting turfgrasses from winter injury and desiccation. Even more imaginative uses of these materials are expected.

Accelerated propagation

An idea doesn't have to be new to be useful to today's grounds manager. The idea of pre-germination of grass seed has been around a while, but its popularity is just catching up with its usefulness. To promote the quick establishment of overseedings, pre-soak the seed for several days until germination, then combine the soaked seed with a carrier (sand, organic fertilizer, amendment). It's a simple technique. It can save days.

When polyethylene perforated with holes is placed over a prepared seedbed or pre-soaked seed, the polyethylene creates a greenhouse environment and accelerates the establishment of grass.

The idea of pre-germination of grass seed has been around awhile, but its popularity is just catching up with its usefulness.

Turfgrass equipment

Most of the changes in turfgrass equipment in recent years consist of improvements in old designs. Equipment is larger, wider, more reliable and versatile. Improvements in vertical mowing equipment, aerifiers, and larger, more versatile topdressing equipment are noticeable. New companies are expected to develop equipment specifically for athletic field use.

Chemicals and fertilizers

It is in the area of chemicals and fertilizers that the greatest thrust for new products is occurring.

Fertilizers that release nutrients uniformly and over several months are on the boards. Some of these new products will not be dependent on specific weather conditions to release their nutrients.

Growth regulators which reduce seedhead production, maintain superior color, and reduce mowing frequency are close to being perfected and introduced into the turfgrass market. New and improved herbicides, insecticides, and fungicides with broader spectrum systemic qualities are being evaluated and will be available within a short period of time.

With all the activity currently taking place in the sports turf field, and the movement under way to build a professional image and organization, the future of the sports turf manager is on the rise. **WT&T**

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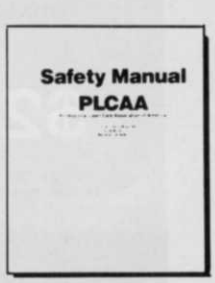

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SURVEY *from page 8*

had to lift 80 lb. bags of seed or fertilizer. When we were planting trees I had to move 250 lb. root balls. And I did it."

The poll uncovered more than a few companies that agree with Merritt, companies that look favorably on women laborers, foremen, and technicians. Several claim females are more concientious than men in their work habits (not tardy or absent as often), perform finish work well, and take better care of tools and equipment.

Even so, three out of four women newly incorporated into the landscape and lawn care industries (73 percent to be exact) end up in the office. Employers are more apt to hire a woman to keep the books, for her secretarial skills, or in a clerical or receptionist capacity.

Another area where women might have an advantage is in sales, the poll suggests. "In a corporate setting, they can get in the door when a man can't," one respondee notes. Another points out that women are a natural for selling lawn services "because 54 percent of decisions to buy lawn sevices are made by women."

Approximately one third (27 percent) of the companies polled by *LCI* claim to "actively seek women applicants to fill specific jobs" within their companies. And 41 percent believe women can "outperform men" in certain jobs.

The survey hints the reason why more women haven't made significant inroads into the landscape and lawn care industries is that there is a shortage of qualified women seeking positions.

"I think the number of women will increase," one company executive notes. "I would not hesitate to hire a qualified female, but rarely does one apply." Another says, "for five years I've advertised for male or female help. And not one female has answered."

Says Smithlin, "There's no question I'm being more recognized as a part of this industry. Most women probably don't think they can handle it because it is so male dominated."

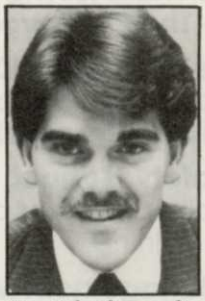
It could be that Merritt and Smithlin, and others like them ("survivors," one respondee describes them) are a step ahead in these basically male industries.

PEOPLE *from page 18*

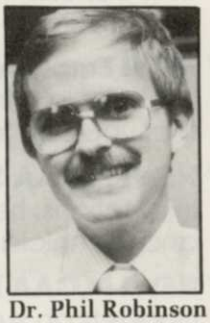
bide in the Northeast and Mid-Atlantic, **Phil Smith**, in the Southeast and Florida, and **Gordon Vosti**, in the West and Pacific Northwest.

Four Star Agricultural Services, Bluffton, IN, appointed **James A. Halloran** national sales manager for Pene-Turf, a landscaping soil treatment. Halloran comes to Four Star from turf distributor Arthur Clesen, Inc.

Daniel C. Alexander has been named advertising and promotion specialist for Arcadian Corp., a Par-



Daniel Alexander



Dr. Phil Robinson

sippany, NJ-based fertilizer manufacturer.

Dr. Phil Robinson is handling the introduction of Acclaim, a post-emergence grass herbicide. He has been named project leader while **Roger D. Boatman** takes over as manager of market research at American Hoechst, Somerville, NJ.

Roger Boatman

POPULAR PERFORMER
570-4P

High pop-up spray head.

- Exclusive Conilip seal and cap for positive retraction
- 4¼" pop-up — durable Cycolac body
- Accepts the full range of Toro spray nozzles

$2.95*

*Suggested retail with nozzle, when nozzle and body purchased separately.

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TORO

The Toro Company, Irrigation Division, P.O. Box 489, Riverside, CA 92502

Circle No. 145 on Reader Inquiry Card

ALCA Field Day

Alan Hazel, assistant educational director for Briggs & Stratton, lectures to students at the 9th Annual Associated Landscape Contractors of America Student Field Day in March. The students were treated to 21 events and had the opportunity to interview with 66 industry representatives.

Brouwer seeder fertilizes too

Brouwer Turf Equipment introduces a compact seeder which will fertilize at the same time.

The Model 24 Lawnmaker self-propelled seeder has a 24" seeding width and a 2 cu.ft. hopper with a stainless steel bottom. It is powered by a 5 hp Honda engine and can seed up to 3/4 acre per hour. Brouwer reports the seeder is useful in seeding small and medium areas.

Circle No. 190 on Reader Inquiry Card

American Trencher makes blades to fit Ford models

The Bradco 725 blade now fits Ford 1910 and 1710 tractors, American Trencher reports.

The 725 blade, featuring 8-way control (6-way hydraulic plus roll out and roll back), comes with a high-carbon skid shoe. The 725 Blade will soon be available on other popular tractors in the 20-35 hp range, its manufacturer says.

Circle No. 191 on Reader No. 191

Worksaver spreaders team with ATVs

The complete, 24-model line of Worksaver rear-mounted seeder/spreaders includes units designed for use with all major makes of all terrain vehicles (ATVs).

Worksaver says an ATV-mounted seeder/spreader covers confined or rugged areas impossible to reach with a tractor, is not destructive to soft or muddy ground, and handles smaller jobs more economically than manual seeding.

Each seeder/spreader is equipped with a one-bushel hopper made of corrosion-resistant polyethylene, and features seed gate control and variable fan speed. A hopper lid eliminates the loss of seed or fertilizer to the wind. Splash guard, 12-volt motor, and complete wiring harness are included.

Circle No. 192 on Reader Inquiry Card

Roto-Hoe shows four new shredder models

Shredding vines, stalks, and tree prunings shouldn't be a problem with an assortment of new shredders being offered by Roto-Hoe.

Smallest of the new offerings is the Model 500 with either 6 rigid tine-type tines or 21 hammermill knives and a 3 or 5 hp Briggs and Stratton engine. The unit is 23 1/2-in. wide and 38 1/2-in. high.

The largest is the Model 2000 which comes standard with 44 flail or hammermill tines, an 8 hp Tecumseh engine (with cast iron sleeve), and is 40-in. wide and 38 1/2-in. high. Roto-Hoe also makes two models (the 550 and the 800) in between the 500 and 2000.

All units feature side feed for vines and tree prunings up to 1 1/4-in. in diameter and a top hopper for lighter materials like leaves and grass clippings. The units are made of 12-gauge steel with 16-gauge top and side hoppers.

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Sophisticated, reliable and very easy to program

- Program visible at a glance
- Solid state reliability, electro-mechanical dependability
- Six station lawn or lawn and shrub capability

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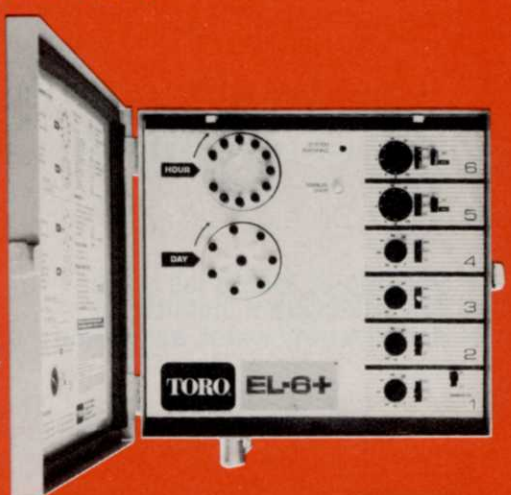

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TORO

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Circle No. 146 on Reader Inquiry Card

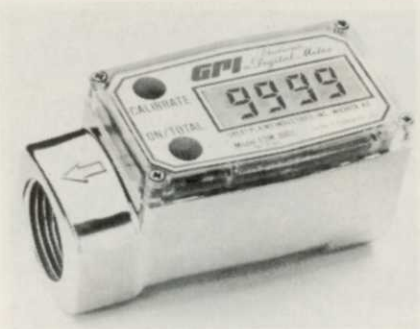
Front grate bars, tow bar, and swivel wheel assembly are standard. A mulch catcher attachment is made for all models.

Circle No. 194 on Reader Inquiry Card

Electronic flow meter measures liquid sprays

A new electronic digital meter by Great Plains Industries tells exactly how much you or your applicator has sprayed on each service call.

Made of stainless steel, the EDM-300S high pressure unit (up to 600 psi) installs easily onto the pump, spray gun, or boom. It is compatible with all fertilizers, herbicides, insecticides, fungicides, and other chemicals. Flow range is from three to 30 gallons per minute.



The unit comes with push button calibration and lithium power cells rated for 1,700 duty hours.

The EDM-300S features Delrin rotor and support, tungsten carbide shaft, ceramic bearings, and straight flow through which minimizes pressure drop and provides easy flushing to prevent residue buildup.

Circle No. 194 on Reader Inquiry Card

Reuter shows six new "natural" pest killers

Six new products fill out Reuter's Attack line of natural pesticides. Reuter Laboratories now has 16 insecticides in the line which is being marketed as an alternative to chemical pesticides.

New products include: Sod Webworm Attack, Vegetable Insect Attack, Mosquito Attack, Caterpiller Attack, and Tomato Worm Attack. The biological pesticides contain Bacillus Thuringiensis (BT), harmful to insect pests but non-toxic, non-chemical, and ecologically safe.

The products enlarge the line which previously had consisted of milky spore for Japanese beetle grubs, now labeled Grub Attack in both powder and granular form, and 14 other Attack insecticides.

Circle No. 195 on Reader Inquiry Card

Turf sweeper for home, commercial use

Rugged construction makes the CM136 Turf Groom lawn and turf sweeper suitable for home or commercial use, says its builder, Country Manufacturing.

The unit's spiral brush is driven by 16" O.D. pneumatic tires. There is enough power to completely fill a bag. The CM136 comes with a clutch to allow the unit's movement without sweeper action, and a bag-dumping lever lays flat for working under low branches.

Circle No. 196 on Reader Inquiry Card

TOP PERFORMER 610

Large turf coverage at an economical price.

- 3½" pop-up clears tall grass
- Vandal resistant installation
- Handles dirty water, sandy soil

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Glade — from your local wholesale distributor.

Glade

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License in Canada No. 2133

Another fine, quality-controlled product of Jacklin Seed Company.

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RATES: $1.00 per word (minimum charge, $25). Bold face words or words in all capital letters charged at $1.25 per word. Boxed or display ads: $85 per column inch-1x (one inch minimum); $80-3x; $75-6x; $70-12x. Agency commissions will be given only when camera-ready art is provided by agency. For ads using blind box number, add $5 to total cost of ad. Send ad copy with payment to Dawn Anderson, WEEDS TREES & TURF, 1 East First Street, Duluth, MN 55802 or call 218-723-9200.

BOX NUMBER REPLIES: Mail box number replies to: WEEDS TREES & TURF, Classified Ad Department, 120 W. 2nd St., Duluth, MN 55802. Please include box number in address.

BUSINESS OPPORTUNITIES

WANT TO BUY OR SELL a golf course? Exclusively golf course transactions and appraisals. Ask for our catalog. McKay Golf and Country Club Properties, 15485 N. East Street, Lansing, Michigan 48906. Phone (517) 484-7726. TF

Help Wanted

HELP WANTED-LANDSCAPE FOREMAN- Growing landscape firm is seeking enthusiastic individual with knowledge of plant material and landscape construction. Ability to lead and motivate crew members essential. Year 'round salaried position with benefits. Contact: Earl C. Willcott, Jr., **JACKSON NURSERY INC.**, 217 West Main St., Norton, MA 02766. (617)285-7951.

LANDSCAPE MAINTENANCE ASS'T MANAGER- Established commercial maintenance company seeks individual with knowledge in turf and ornamental pests. Responsibilities include sales, personnel management and training, and site inspections, etc. Please send resume to: The Country Greenery Inc., R.D. 1 Box 638, Pittstown, NJ 08867. **ATTN** ; Bryant Stutz.
6/85

Interested in a basic part of the seed industry? Northwest seed company is interested in an ambitious individual to buy and contract turf and field seed in the Willamette Valley of Oregon. Advancement opportunities are available as we develop wholesale seed account business. Please submit resume and cover letter to: Walter Bryant, Manager, Roberts Seed Company, P.O Box 206, Tangent, OR 97389. Equal Opportunity Employer M/F.
6/85

MARKET DEVELOPMENT/REGIONAL MANAGER. Positions open for aggressive self-starter in the Northeast and in Southeast. Sales experience a must. Established company seeks representatives with experience in turf and ground care vehicles. Prefer manager with Cushman background. Extensive travel required in Northeast and Southeast. Duties will require dealer development and sales management expertise. Company car, salary, plus incentive. Excellent opportunity for a go-getter. Come grow with us. Send resume and salary history in strict confidence to **TERRAIN VEHICLES. INC. P.O. Box 418, Addison, IL 60101.**
6/85

TRU GREEN TREE & SHRUB NEEDS: BRANCH MANAGERS-BRANCH TRAINEES- Tree care service seeking dependable individuals experienced in tree and shrub identification, problem diagnosis, sales or tree spray. Will consider college graduate in related field. Permanent position with rapid growing company. Send resume to Wm. Scott Carr, **TRU GREEN TREE & SHRUB CARE,** 2875 Northwind Dr., Suite 205, E. Lansing, MI 48823.
7/85

OPERATIONS MANAGER- Grounds maintenance firm in Florida is seeking an individual to manage and direct the lawn maintenance division. Previous experience in multi-crew organization, knowledge of equipment, chemical programs and ornamentals a must. Strong people and management skills. Mail resume to: Personnel Dept., P.O. Box 16123, Clearwater, FL 34279. 6/85

CAREER OPPORTUNITIES. ChemLawn is now accepting applications for the positions of Lawn Specialist in our expanding Florida markets. Join the Nation's Leader in Lawn Care. Send resume to WTT Box 362 9/85

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HYDRO-MULCHERS AND STRAW BLOWERS New and used. **JAMES LINCOLN CORPORATION,** 3220 S. Jupiter Rd., Garland, TX 75041. (214) 840-2440(TX), (800) 527-2304 (except TX) TF

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Rotary Ditch and Bank Cutters-Three Woods 5 ft. three point hitch, used three months, $2,000. each., Pittsburgh, PA (412)863-9025.
6/85

LAWN SEED. Wholesale. Full line of top quality grasses. Improved bluegrass varieties, fine fescues and fine bladed ryegrasses. We specialize in custom mixing. Oliger Seed Company, 2705 Wingate Avenue, Akron, OH 44314. Call collect (216) 753-2259. TF

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TREE TRIMMING EQUIPMENT--Aerial basket trucks with chip boxes and chippers (1970-1975). Priced to sell--offers accepted. Call (218) 724-7622, or write ATS, P.O. Box 3280, Duluth, MN 55803 6/85

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NEW and USED EQUIPMENT — Asplundh, Hi Ranger and Lift-all forestry bucket trucks, Chipmore wood chippers. Mirk, Inc., (216) 669-3567, (216) 669-3562, 7629 Chippewa Road, Orrville, Ohio 44667. TF

USED EQUIPMENT FOR SALE- M-F 50-40 Sellick Forklift- $11,800. M-F 2200 Forklift- $9,200. M-F 35 Turf Tractor- $4,000. M-F 203D Loader/Backhoe- $7,800. M-F 2135 Tractor- $5,100. M-F 275 Tractor- $8,900. 990 David Brown Tractor- $3,150. 1200 U.S. Gal. Finn Hydro Seeder- $8,500. MSD23 Finn Staw Blower- $5,500. Call: (519) 893-1350, McLean-Peister, Ltd., 3328 King Street East, Kitchener, Ontario. Canada N2A 1B3. 6/85

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Wanted to buy **HYDRO SEEDER**. Please send photo. Johnson Hydro Seeding Corp., 13751 Travilah Road, Rockville, MD 20850, 301/340-0805. TF

Wanted to buy Brouwer Harvester 18" model. Schulz Sod Farms. 1833 N.W. 33rd. St., Rochester, Minnesota 55901. (507) 288-3999. 6/85

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KELWAY® professional **SOIL ACIDITY** and **SOLUBLE SALTS TESTERS,** available from distributors nationwide. HB-2 and SST brochures from **KEL INSTRUMENTS CO., INC.,** P.O. Box 1869, Clifton, N.J. 07015. (201-471-3954). 9/85

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is seeking an outstanding individual for the position of Assistant Executive Director. Candidates must have proven organizational and administrative skills and public speaking experience. Knowledge of lawn care/turf industry is desired, but not mandatory. Some travel required. Successful candidate must be willing to relocate to Atlanta. Beginning salary in mid-20's. Position open 7/1/85. Send confidential resume to:

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Dependable engines, long wearing clutches, sturdy transmissions and patented flexible drive shafts.

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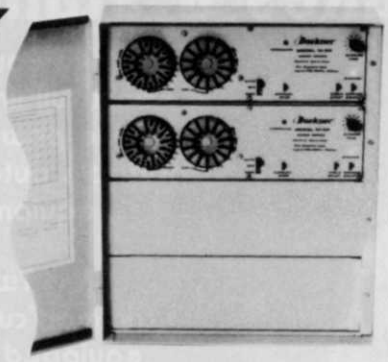
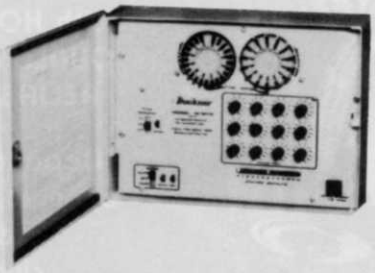


CP-2 Central Programmer



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EVENTS

JULY

International Turfgrass Society Research Conference, June 30-July 4, Avignon, France. Contact John F. Shoulders, ITS, Department of Agronomy, Virginia Tech, Blacksburg, VA 24061.

Association of Physical Plant Administrators of Universities and Colleges, July 10-13, Town and Country Hotel, San Diego. Contact Kathy Smith, Meetings Coordinator, APPA, 1446 Duke St., Alexandria, VA 22314. (703) 684-1446.

American Association of Nurserymen Conference, July 13-17, Orlando Sheraton Twin Towers, Orlando, FL. Contact AAN, 1250 I St. NW, Suite 500, Washington D.C. 20005. (202) 789-2900.

American Sod Producers Association Summer Convention & Field Days, July 17-19, Prince Hotel, Toronto, Canada. Contact Doug Fender, ASPA, 4415 W. Harrison St., Hillside, IL 60162. (312) 449-2890.

Interior Maintenance Technician Short Course, July 27, New Jersey-Sheraton Airport, Newark. Contact Associated Landscape Contractors of America, 405 N. Washington St., Falls Church, VA 22046. (703) 241-4004.

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It's HUSTLER tough and built to last.

Introducing the Hi-Lift BAC-VAC™ attachment from HUSTLER. It's out to make a clean sweep in the grounds keeping industry.

Teamed with HUSTLER's 60-inch or 72-inch 3-Way Deck, the Hi-Lift BAC-VAC will quickly cut and vacuum your turf to perfection, and, just as perfectly, the Hi Lift BAC-VAC hydraulically raises 4.5 feet to easily deposit its 15-bushel capacity load into a container or the bed of a pickup truck. Plus, you do it all without ever leaving the operator's seat! In moments you're off mowing again.

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The low profile design allows the Hi-Lift BAC-VAC to maneuver easily around trees and obstacles.

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Circle No. 115 on Reader Inquiry Card →

Pesticide defense feedback indicates shift in strategy

The reaction to our April Outlook, 'Safer Than Table Salt' Doesn't Work Anymore, has been rewarding. Manufacturers, distributors, and applicator groups have been supportive. They all share a very serious concern for pesticide liability if something isn't done to restore a trust in appropriate uses of pesticides. Each has promised investment in training and public relations.

But, more than anything else, the reaction shows our strategy for dealing with pesticide issues is changing.

It's hard to think offensively when we are regularly pounded by the general press as being sloppy, careless, and untrained. As Russel Weisensel, executive secretary of the Forestry/Rights-of-Way/Turf Coalition, puts it, "When anti-pesticide organizations hint that pesticide residues in our foods are slowly poisoning us and causing birth defects, and write articles stating herbicide exposure caused the amputation of a worker's leg, then references to table salt, shampoo, and other household products are needed to gain attention of our various audiences so that realistic assessments of benefits and risks are considered."

My point was, I'm not sure these comparisons do gain 'positive attention'. Instead, they give the average citizen the negative impression that he is more exposed than he thought to chemical threats upon his health.

Ray Russell, business manager for Dow Chemical's herbicide group, has spent millions of dollars and many weeks on the road defending herbicides. He admits his attitude has changed regarding pesticide defense.

"Pesticide issues are political, not scientific," Russell insists. "We can't fight political battles with lawyers and scientists. We must develop broad-based coalitions to show politicians there are people who believe in the need for pesticides and they are willing to publicly support them."

Russell adds two more reasons for adapting our defense of pesticides. The first is the anti-pesticide battle is less national and more local.

The second is the attack is against pesticides in general, not specific products. This makes a reasonable defense more difficult since the data on specific pesticides is much easier to present than a defense of all pesticides. After all, there have been mistakes and we can't hide from them.

The Environmental Protection Agency has made matters worse by deemphasizing the separation of restricted use from general use pesticides. Citing budget constraints, EPA has played into the hands of those wanting all substances more complex than baking soda banned from the market.

Weeds Trees & Turf in coming issues will feature organizations, not just talking, but acting.

Bruce F. Shank

by Bruce F. Shank, executive editor

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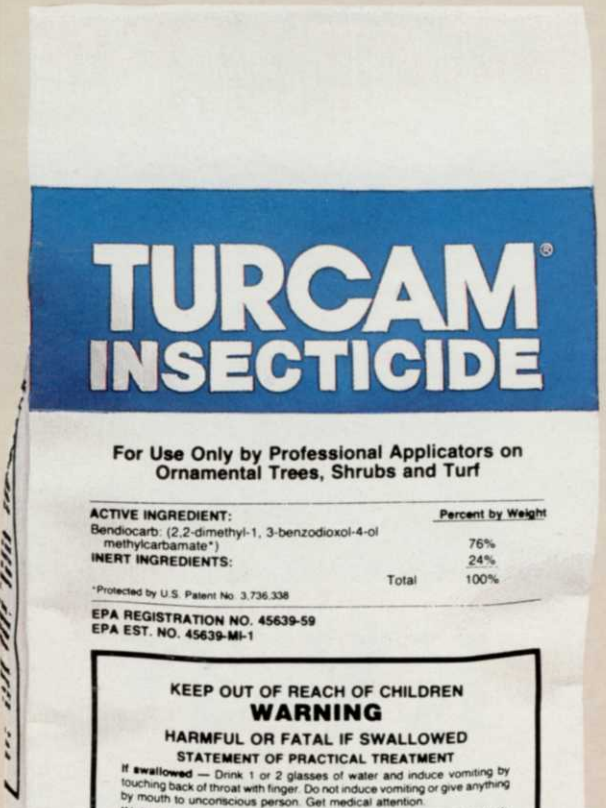

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REBEL	6.8	8.2	7.5	6.5	4.8	7.0	7.6	6.8	5.1	6.7
FALCON	6.8	7.7	6.9	6.6	4.8	6.2	7.3	6.4	5.1	6.4
OLYMPIC	6.9	8.1	6.5	6.3	4.2	5.8	6.6	6.4	4.8	6.2
CLEMFINE	5.9	7.3	6.3	5.9	4.1	6.3	4.6	5.9	4.2	5.6
GALWAY	—	7.5	6.0	6.4	4.8	6.1	5.1	5.5	4.4	5.5
KY-31	5.5	6.8	6.3	5.2	4.1	5.9	3.6	5.4	5.0	5.3
ALTA	5.8	—	5.8	5.2	—	5.2	2.5	—	4.1	4.8
FAWN	—	5.8	5.5	5.1	3.4	4.5	2.1	—	3.9	4.3
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